

THE CONTINUING DEMOGRAPHIC TRANSITION

Edited by

GAVIN W. JONES
ROBERT M. DOUGLAS
JOHN C. CALDWELL
RENNIE M. D'SOUZA



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OXFORD

UNIVERSITY PRESS

Great Clarendon Street, Oxford OX2 6DP

Oxford University Press is a department of the University of Oxford.
It furthers the University's objective of excellence in research, scholarship,
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Oxford New York

Auckland Bangkok Buenos Aires Cape Town Chennai
Dar es Salaam Delhi Hong Kong Istanbul Karachi Kolkata
Kuala Lumpur Madrid Melbourne Mexico City Mumbai Nairobi
São Paulo Shanghai Taipei Tokyo Toronto

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Published in the United States
by Oxford University Press Inc., New York

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ISBN 0-19-829257-0

Acknowledgements

The editors are warmly appreciative of the contributions of a large group of sponsors and committee members who made the Caldwell Symposium, on which this volume is based, possible. The sponsors included the Academy of the Social Sciences in Australia, the Andrew W. Mellon Foundation, the Australian Population Association, the Australian Agency for International Development, the Commonwealth Department of Human Services and Health in Australia, the Ford Foundation, the International Union of Scientific Study of Population, the National Centre for Epidemiology and Population Health at the Australian National University, the Overseas Development Administration, the Population Council, the Research School of Social Sciences at the Australian National University, and the Rockefeller Foundation.

Dr Gigi Santow played a particularly important role in drawing the intellectual threads of the meeting together, and Ms Wendy Cosford has played a major role in copyediting.

We also acknowledge the key role played by staff of the National Centre of Epidemiology and Population Health at the Australian National University including especially Ms Peggy Daroesman, Ms Kaye Devlin, and Mr Ron D'Souza.

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Introduction

GAVIN W. JONES AND R. M. DOUGLAS

Over the course of the twentieth century, the world's population will have climbed from 1.6 billion to an expected 6.3 billion. This extraordinary expansion of population, one of the key distinguishing features of this century, has resulted from a widening gap between falling death rates and less sharply falling birth rates. Successively shorter intervals have been required for the addition of each billion people: thirty years for the third billion, fourteen years for the fourth billion, thirteen years for the fifth and an expected eleven years for the sixth billion. This contracting time has resulted from the larger base on which each successive billion was added, as well as from increasing rates of population growth until the peak of 2.1 per cent per annum in the 1965–70 period, after which the rate has been gradually declining.

A sustained increase in human life expectancy has been the major factor in the upsurge in world population over the past 150 years. In Western countries, the sudden surges in mortality that kept populations within bounds in previous centuries were largely eliminated by the early nineteenth century, and death rates began to fall more rapidly from the mid-nineteenth century. At varying times, though generally some years later, and for reasons that are still the subject of debate, parents began to limit the size of their families and community birth rates fell. The European process of demographic transition was well advanced by the turn of the twentieth century, though in most of eastern and southern Europe fertility had not yet started to decline and the population was still growing rapidly (Coale and Watkins 1986). As the twentieth century progressed, these rates slowed, and many industrialized populations have now reached a state of zero growth where, despite a handsome elongation of life expectancy, fertility rates have fallen to near or below-replacement levels. In many cases, fertility is so low that substantial population declines are in prospect.

What were the social processes at work in these populations? What steps did women take to reduce the number of their offspring? What was the connection between life expectancy and desired family size? What role did the great social movements of urbanization, industrialization, rising affluence, and disease control play in these changes?

Advances in science, medicine, sanitation, and nutrition appear to lie at the heart of the profound falls in mortality that have taken place in all of the non-industrialized world during the twentieth century. Life expectancy at birth has grown for all populations, although not at equal rates. And for many of these so-called Third World populations, an apparently linked fall in fertility has followed. Population growth is continuing in these populations because the fall in mortality has not yet been balanced by an equal fall in fertility, and in some the fall has barely commenced.

Never in human history has so wide a range of demographic situations prevailed in different parts of the world as at present, with population decline imminent in many countries, exponential growth still in prospect in many others, and most countries placed somewhere in between. The extraordinary gulf in fertility that has now opened between countries, with some having far-below-replacement fertility rates and others still with a norm of six children or more per family, and the continuing wide differences in mortality rates make it imperative for us to better understand the determinants of both fertility and mortality, and the relationships between the two. Probably for every human population there is a different combination of factors at work.

This book deals, from different perspectives, with the continuing demographic transition. Demographic transition, for all the controversy that continues to surround it (Szreter 1993), is the one demographic reality around which a substantial body of theory has been built. It is therefore central to demography's claim to represent a fully fledged field of social science research, and it was natural that a conference called to honour one of the great demographic empiricists and theorists of the second half of the twentieth century, John C. Caldwell, would focus on aspects of demographic transition, towards the elucidation of which Caldwell has contributed so much. Caldwell and his wife Pat have been at the forefront of the attempt to understand and interpret fertility and mortality transitions and their social implications, in a series of landmark publications focusing especially on sub-Saharan Africa and Asia. Their theories of the role of female education and autonomy, of transgenerational wealth flow, and of the role of social, behavioural, and cultural factors interacting to produce changes in both health and reproductive behaviour are now classics of twentieth-century scholarship.

The present volume arose from a meeting held in Canberra to mark Jack Caldwell's formal retirement. Caldwell was, and remains at the time of writing, the President of the International Union for the Scientific Study of Population (IUSSP), and his peers, students, and admirers presented some of their best work at a conference which sought to bring a broad disciplinary mix of people to discuss the phenomena that have been so much a part of the Caldwells' life work. The essays in this book are thus

linked by a Caldwellian thread and an attempt to better understand the issues that will determine the survival and well-being of our species.

The title of the book implies a number of assumptions which should first be brought into the open. The first is that there *is* a demographic transition: a process whereby demographic variables change in a systematic way from one state to another. This suggests some sort of stability about the starting point and the end point of such a transition. And indeed, over the past sixty years, in discussion and theorizing about demographic transition, this has been the general consensus. The conventional wisdom, as taught to beginning students of demography, goes like this. The first stage of demographic transition is one of relatively low population growth rates generated by both high fertility and mortality rates, and the end point is one of relatively low population growth rates generated by both low fertility and mortality rates. In between, fertility and mortality pass through a process of decline. The stylized version shows mortality decline beginning first, thus opening up a wide gap between mortality and fertility rates, resulting in high population growth rates. There is enough reality in this stylized version to explain the extraordinary upsurge in world population during the twentieth century. On the other hand, historical research has made clear the wide range of circumstances prevailing in countries passing through the transition, including cases where mortality did not decline first.

The second implied assumption is that, at the end point of the demographic transition, some kind of stability is reached: perhaps a stability in population size, or at least so slow a rate of population growth, as a result of stability in birth and death rates at low levels, that unsustainable populations will not be reached. By definition, unsustainable populations would lead to a demographic collapse, presumably through rising mortality rates, thus rudely interrupting the balance in birth and death rates, and indicating that the end of the demographic transition had not, in fact, been reached.

However, in recent years a different problem has emerged about the end point: rather than implying lower population growth rates than are likely to happen in reality, it may imply somewhat higher population growth rates. As Demeny's chapter in this volume (Chapter 5) points out, over the past two decades fertility in the West, as well as in some East Asian countries, has sunk so low that it is only the legacy of past high fertility in boosting the childbearing section of the age structure that has prevented quite dramatic declines in population from taking place. This temporary, though protracted, period of 'postponing the inevitable' will not last much longer. Thereafter, unless fertility rises much closer to replacement level, declines in population size will begin and will be steep in countries such as Germany, Italy, Russia, and Spain. These will be the forerunners, but population decline caused by sub-replacement

fertility is in prospect within the next two decades not only in Europe as a whole, but also in countries such as Japan and Hong Kong, and a little later in Taiwan, Korea, and Singapore.¹

This being the case, the convenient assumption that the end point of the demographic transition can be marked by replacement-level fertility (a net reproduction rate of one) has now been replaced by great uncertainty over whether there *is* indeed any end point. The low population growth rates attained at low levels of fertility and mortality may represent not an end point, but rather a transit zone *en route* to massive population decline resulting from well-below-replacement fertility. And trends in fertility rates are unlikely to end there: in a situation implying the eventual demise of whole populations, substantial increases in fertility never envisaged in the demographic transition typology, however engineered, may be expected which will forestall the accelerating downward spiral in population size.²

If this is the case, then we may eventually be led to discard the term 'demographic transition', or at least to reserve it for the trends only up to the point where fertility drops to replacement level. The trends thereafter, which are still playing themselves out, might better be referred to as 'demographic fluctuations', because this remains uncharted territory.

Paradoxically, though, there remain large swathes of the world where mortality and fertility remain high (though mortality normally has declined enough to have opened a wide gap resulting in rapid population growth), and where human welfare requires very significant declines in both mortality and fertility. Much of the present volume deals with just such countries: with the failure of their vital rates to decline, or more commonly with the pattern and speed of their incipient or incomplete declines, and the factors responsible for these.

The concept of demographic transition is a powerful one encompassing the main concerns of the volume. As a stylized demographic fact, it bears at least enough relation to the course of events over much of the world, either earlier or later in the last 150 years, for it to serve as a general organizing theme for papers which range very widely over the determinants and consequences of fertility and mortality levels and trends. Demographic transition *theory*, on the other hand, has come in for sustained criticism, much of it well founded. By choosing to use the term 'transition' in the title of this book, we do not intend to lend credence to the sometimes misguided body of theory that has developed around it, be it in the form of crudely economic determinist explanations, or equally crude evolutionary or modernization theory,³ or narrowly focused diffusion theory.⁴ Rather, we intend to let the term be 'all things to all people' and to let the various chapters get on with the job of presenting their stimulating insights into what lies behind the broad forces of demographic change.

In the mass of academic writings on the fertility transition over the past twenty years, a number of emphases have emerged. Theories of fertility determination can be categorized in various ways: for example via economic and sociological theories (Jones 1982), or via theories that stress individual decision-making over broader family or clan influences. Current debate over these influences tends to highlight the following three broad schools of interpretation: household demand, cultural/ideational change and diffusion, and changes in social institutions.

Though these kinds of interpretation are not mutually exclusive, they are often made to seem so by their protagonists. Demand theory applied to fertility has been largely the province of economists, and has its roots in the microeconomics of the family (Becker 1975; Schultz 1981). Cultural/ideational and diffusion theory, focusing on diffusion of knowledge about fertility regulation and the social acceptability of control over reproductive behaviour, draws particularly on sociological and communications theory, and is sceptical of what are seen as economic determinist explanations of fertility. 'Perhaps the biggest mistake of many population scientists has been their belief that poverty and illiteracy inevitably imply a demand, or need for large numbers of children' (Cleland 1993). A smaller band of writers have stressed the importance of institutional factors, which set the context within which individuals make decisions on childbearing (McNicoll 1980). These three kinds of interpretation are often made to seem mutually exclusive by their protagonists, though many would argue that a satisfactory explanation of fertility transition needs to invoke more than one of them, and elements of all three approaches can certainly be integrated in a comprehensive approach.⁵

Few of the chapters dealing with fertility in the present volume hew strictly to any one of the three 'families' of approaches just noted. This probably indicates something about the emphases of the conference organizers, but something also about the widespread acknowledgement that, to enable us to understand fertility determinants, the net must be cast widely.

The task of singling out from the numerous themes and approaches of the studies included in this volume those areas—if any—where a major contribution has been made in advancing theory or methodology is best left to independent reviewers. Rather, in the remainder of this Introduction we will simply highlight some of the key areas covered and sample some of the stimulating ideas presented.

The first chapter is, appropriately, the *Caldwells'*. It attacks the notion that there was substantial fertility control in pre-transitional societies, and provocatively outlines why groups as diverse as anthropologists and family planners have found comfort in the notion that such control did in fact exist. The authors argue that the fertility transition is economically based but that its timing depends on ideologies, and that the onset of fertility

decline 'can only be fully explained by the export of social systems and the ramification of ideas'.

This is followed by five chapters which contribute insights into a number of aspects of the demographic transition. In Chapter 2 Smith describes mortality changes in Australia from 1880 to 1910. He notes that, apart from pulmonary TB, the infectious diseases that feature so largely in the medical history literature made only a minor contribution to mortality. The attention to communicable diseases made sense in that civil engineering and the new bacteriology made the problems solvable. But over time, as doctors took the kudos and shaped public health spending patterns, these tended to lose touch with the realities of the evolving morbidity-mortality situation.

The emphasis in theorizing about fertility determinants has been on decisions of married couples, or at least of those in stable, potentially childbearing, relationships. Though this emphasis has its problems in Latin America and the Caribbean and increasingly in Western countries, it is unremarkable in Asia, where childbearing outside marriage remains extremely rare. For this reason, the tendency for long delays in marriage, and emerging high proportions of women remaining unmarried throughout their potential childbearing span, particularly in the cities, has important implications for fertility trends, although the desire to avoid childbearing *per se* probably has little to do with them. Jones's chapter (Chapter 3) on the demise of universal marriage in East and South-East Asia, though not focused on fertility transition, is nevertheless highly relevant to gaining a fuller perspective on the forces influencing this transition.

As fertility declines take hold in regions such as sub-Saharan Africa, there is a need for sensitive measures of the decline which can effectively use the available data. Brass, Juarez, and Scott (Chapter 4) demonstrate that analysis of parity progressions provides robust evidence on these trends, which can be extended to cohorts of incomplete fertility by the calculation of surrogate measures of parity progression. There is also a need in societies undergoing fertility transition to plan for the changing well-being of the elderly, which many have argued is likely to decline, at least initially, until formal support systems are developed to substitute for informal systems which are being weakened by the demographic, social, and economic trends. Hugo (Chapter 6) argues that in the case of Indonesia the comforting notion that the family will continue to care for the elderly requires modification, and that social security schemes and other formal support mechanisms will need to be developed.

In recent times there has been increasing attention to the role of culture in demographic explanation, a topic dealt with directly and provocatively in Chapter 7 by Kertzer, but also less directly by a number of the other chapters which have been grouped to form the longest section

of the book. This attention has been paralleled by increasing attention to anthropological or quasi-anthropological approaches in demographic investigation, partly, it seems, because to demographers anthropologists 'understand' culture, and partly because a few demographers, notably Caldwell, found that some of anthropology's ethnographic methods lent themselves to developing new insights into understanding demographic transition. Notable milestones in this field of research include the establishment of a committee by the IUSSP, successively entitled 'micro demography' and 'anthropological demography', and the publication of the papers submitted to its first workshop (Caldwell *et al.* 1988); a limited, though increasing, number of studies based on this methodology; and the recent publication of edited volumes by Greenhalgh (1995) and Kertzer and Fricke (1995) which include a number of strong contributions in this field.

The field of anthropological demography still has far to go. Caldwell's comments after reviewing the papers presented at the session organized by the Anthropological Demography Committee at IUSSP's International Population Conference in 1993 in Montreal were that, 'a little sadly, but also excitingly, we are still in the very early stages of the development of a new and important sub-field' (Caldwell 1993: 302).

In the present volume, there is considerable overlap between chapters that make a contribution to the role of culture in demographic explanation, and those that we believe will help to move the sub-field of anthropological demography forward. The major contribution of the present volume, we would claim, is in these two areas, in many cases through papers that adopt an anthropological approach to better understanding the role of cultural factors. The chapters by Bledsoe and Camara on Gambian women's perceptions influencing fertility behaviour (Chapter 11), by Amin and Cain on the rise in dowry demand in contemporary Bangladesh (Chapter 13), by Fricke on marriage change in Nepal (Chapter 9), and by Basu on anthropological research on the determinants of child mortality (Chapter 14) are examples of this genre. But the role of culture can be investigated in a variety of ways, as is demonstrated in Chapter 12 by Amin, Diamond, and Steele, who bring out the role of religion in contraceptive use in Bangladesh through sophisticated multivariate analysis of survey data.

Kertzer's chapter (Chapter 7) deals with some of the basic issues of demography's treatment of culture, issues highlighted by Hammel's (1990: 456) trenchant claim that 'the use of "culture" in demography seems mired in structural-functional concepts that are about 40 years old, hardening rapidly, and showing every sign of fossilization'. Ambivalence is evident among demographers over whether cultural influences on human behaviour or cultural barriers to demographic change should be taken seriously, or instead consigned to an error term in explanatory models, an

action neoclassical economic theory would suggest is warranted by culture's limited influence. Major issues arise here, including the relevance of rational actor theory (which Kertzer argues is based on a fundamentally flawed paradigm of human behaviour) and the nature of cultural determinism. Kertzer notes that anthropologists who work on the role of culture in demographic explanation share in common a rejection of the just-another-laundry-list-of-variables approach, suitable for entry into the left side of a regression equation. Culture should be viewed as dynamic, and individuals have considerable autonomy in manipulating culturally produced norms and beliefs for their own ends. But the choices they have to make are limited culturally and constrained in complicated ways by a variety of political, economic, and institutional forces.

Karen Mason's chapter on gender systems and demographic change (Chapter 8) is a provocative overview of an area in which ideology tends to upstage scientific rigour. She notes that it is difficult to make strong causal inferences about gender systems and demographic change because of the aggregated nature of demographic change, the complexity of gender systems, and the varying role that such systems appear to play under different circumstances. Mason sounds some apt notes of caution with relation to the 'New Population Policy Paradigm' emerging from the United Nations International Conference on Population and Development, held in Cairo in 1994. For example, the conclusion in the Programme of Action that 'improving the status of women . . . is essential for the long-term success of population programmes', though not necessarily false, is unwarranted by our current state of knowledge. The effect of female education on fertility is not as clear-cut as many would have us believe (nor, as Knodel and Jones (1996) stress, does the much-touted differential promotion of girls' schooling always logically follow); the relationship between female education and child survival is clear, but the mechanisms are still unclear (see also Caldwell 1994); gender inequality is linked to child mortality, but it is not clear how to influence this.

With regard to the impact of demographic change on gender systems, much remains speculative. Declines in fertility towards replacement level, and the rising female ages at marriage occurring throughout Asia and elsewhere, can plausibly be expected to contribute to changes in gender stratification systems that will enhance female welfare. A crucial issue, given the rising sex ratios among the child population in countries such as China, Korea, and India (Park and Cho 1995), is whether the relative scarcity of females will make for improved female welfare. Though this would appear to be a logical outcome, by enhancing their value on the marriage market, Mason notes that in patriarchal settings scarcity could actually result in tightened control over daughters.

There are a number of chapters in this volume dealing with mortality transition. Two of them—Basu's and Pleris Caldwell's (Chapters 14 and

15), deal with anthropological approaches in the study of health and mortality. Basu argues that certain biological predispositions to child death may have important non-biological elements. For example, the demonstrated link between low birth weight and prematurity may arise partly because such infants are not expected to live or are not wanted alive, and are therefore neglected; or the risk of death to children of very young mothers may arise partly from the social circumstances of very young mothers. Basu provides a stimulating perspective on what an 'underinvestment' framework might have to offer, with observations on the real meaning of underinvestment through ignorance, through circumstances, and through deliberate neglect (as either a defensive or offensive strategy). One of her most provocative observations is that anthropological demography tends to become mired in political correctness. Partly to atone for the ethnocentrism of anthropology in the past, there is now much sympathy for and understanding of alien behaviours, which when taken to the extreme result in an unhealthy endorsement of the status quo in the name of respecting cultural sensitivities. Similarly, demography suffers from an activist bent in politically correct directions, and is therefore inclined to take over from anthropology as demographic fact (somewhat selectively) outcomes that anthropology has only suggested are possible. Examples include biased presentation of favourable reports on the relationship between maternal employment and child mortality, adoption of the notion of the universal altruistic mother or household, and the uncritical conclusion, based on very little evidence, that girls in South Asia are discriminated against in the allocation of food within the family. Not only does the straining for policy relevance lead to recommendations going well beyond the objective research findings, but it leads also to an excessive attention to individual-level solutions to problems, and a lack of attention to the broader political and economic forces impinging on individual behaviour.

This last point can perhaps provide the link between these chapters and the three chapters included in the final section of the volume, on the place of policy and institutional factors in the explanation of recent fertility declines. McNicoll, in Chapter 16, argues that Asian fertility transitions have much to do with administrative capacity and varying degrees of duress, elements that are notably absent from the Cairo Programme of Action. He is even brave enough to portray along two dimensions, 'regularity' and 'duress', the location of a number of major Asian countries. When considering transferability of Asian experience to other countries, the preferable lesson is the value of effective administration rather than the resort to duress. Indonesia, which ranks fairly high on both the 'regularity' and 'duress' dimensions according to the McNicoll portrayal, is dealt with in greater detail by Hull and Hull (Chapter 17). In discussing its fertility decline, the Hulls link institutional and cultural considerations;

but the distinctive aspect of their chapter is their emphasis on the political and bureaucratic cultures in explaining the effective role of government programmes in bringing about fertility decline. It is a relief to see, in place of papers repeating others' generalizations about the Indonesian family planning programme, an insightful paper written by authors with a detailed knowledge of the inner workings of this programme and of the Indonesian bureaucracy more generally.

Bongaarts, who pursues the ongoing debate over the past and potential role of family planning programmes in contributing to fertility declines, is appropriately, we believe, given the last say. He assesses the arguments dispassionately and, not surprisingly, reaches the conclusion that the effect of such programmes is less than some of their proponents have argued but more than the more trenchant critics allow. However, their likely additional effects in future are limited because strong programmes already exist in the most populous countries. Therefore the population policy agenda should be expanded to address the need to lower desired family size and population momentum: the desired family size through raising levels of education and reducing gender inequality and child mortality, and the momentum by raising the age at first birth and addressing the needs of adolescents. If this sounds very much like the Cairo Programme of Action, this is because Bongaarts seems to believe that Cairo got it about right.

Bongaarts's view is not one that the other authors in this volume would necessarily share; indeed, the different perspectives that the book presents on policy issues provide a springboard for further debate.

NOTES

1. This is based on United Nations (1995) projections. In its medium projections, the UN assumes (without any clear basis) substantial increases in fertility in European countries over the first half of the 21st c.; without such increases, Europe's population would decline by some 112 m, or 15%, between 2000 and 2050 (United Nations 1995: 493). Without fertility increases, the population decline in southern Europe would be even more drastic: 21%.
2. Presumably it was logic of this kind that led the UN to project a gradual rise in fertility in European countries whose fertility has sunk well below replacement, as there seems to be little behavioural basis for such an assumption other than the shock to conventional patterns that would presumably arise both from the realization that substantial population declines were in prospect, and from possibly drastic pronatalist measures that governments might introduce when faced by such prospects.
3. Greenhalgh (1995: ch. 1) reminds us that, 'even as they abandoned the main hypotheses of classic transition theory, demographers seeking new approaches

managed to retain many of the implicit assumptions that underlay it. Indeed, many features of contemporary fertility theory bear the clear stamp of the demographic version of mid-century modernization theory'.

4. Diffusion theory has to do with the process by which new ideas, norms, or practices are transmitted through a society.
5. The most comprehensive treatment of the determinants of fertility, the two-volume study commissioned by the Committee on Population and Demography of the US National Research Council (Bulatao and Lee 1983), adapted the Easterlin framework which utilizes the concepts of supply of and demand for children, and the costs (not only monetary) of fertility regulation. Lee and Bulatao, in a chapter entitled 'The demand for children: a critical essay', note that some see modernization (or development) as making latent demand for fertility regulation effective: bringing it within the realm of conscious choice, to use Coale's (1973) well-known term. Others (and this includes most demographic transition theorists) see it as eventually reducing the demand for children.

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PART I

Fertility Transition

What Do We Now Know about Fertility Transition?

JOHN C. CALDWELL AND PAT CALDWELL

The fertility transition has a claim to be the most important happening of our time. It has changed the nature of the family and the relationships between old and young as well as guaranteeing that the advances against mortality can be maintained. It has altered whole societies. We have found that research in this area can be fulfilling over a lifetime. Research on the origins and nature of this phenomenon are of profound intellectual interest. But much of the recent research has been funded with more practical aims, such as the guiding of policies and programmes. This might be a fitting time to examine whether fundamental research in this area has given us the truth about ourselves, and also whether it has given adequate guidance for efficient programmes. We wish to concentrate on five themes about areas where we believe there are problems of interpretation.

The first theme concerns fertility control in pre-transitional societies. Many social scientists ardently believe that there was such control, albeit at higher fertility levels. This belief meets a range of intellectual needs. Anthropologists often feel at peace with themselves only when they have concluded that cultures, although different, are in a sense equal. One sign of this equality is the ability to employ human intelligence to achieve optimal reproduction within the circumstances of the society. Some family planners seized upon this concept because they felt more comfortable and more likely to succeed if they concluded that they were not initiating a fundamental first-time change in the society in which they were working but instead were allowing that society to resume its ancient ways—although with new means—after a period of disequilibrium which followed colonial penetration. Many of these ideas, including the overarching concept of the 'Stone-Age affluent society', flowed from Carr-Saunders's 1922 book, *The Population Problem: A Study in Human Evolution*, which aimed at showing that earlier societies had been capable of looking after themselves before the disorganization that followed the arrival of the missionaries.

We have devoted considerable effort to identifying the field evidence upon which these claims rest (Caldwell *et al.* 1987). Most of the evidence

is surprisingly insecure. The whole intellectual edifice has been created by demographers borrowing from anthropologists and by anthropologists borrowing from demographers, in each case using lower levels of scholarship in scrutinizing the borrowed information than they would have felt impelled to use when building upon the work of people within their own disciplines. Certainly there was some fertility control, at least among the elites at the height of Imperial Rome (Frank 1975: 43) and among the late seventeenth-century Geneva bourgeoisie (Henry 1956) as modern Europe began to emerge. Women in Africa and elsewhere have long postponed the resumption of sexual relations after birth in order to give their infants a greater chance of survival (Caldwell and Caldwell 1977; Page and Lesthaeghe 1981). But the evidence for birth control as a method of ensuring families or communities of limited size in traditional societies is just not there. There is ambiguous evidence from the classical civilizations, and more secure evidence from China in recent centuries, of infanticide, especially of girls, to meet transient personal or community crises, but little to suggest a continuing commitment to the small family.

The exaggeration of traditional concepts of fertility control does us a disservice. It means that we are led to believe that every society really understands survey research questions about 'ideal family size' and 'unwanted children' and about fertility control aimed at small family size. It means that we are too apt to believe that the need in all societies is solely for contraception rather than for concepts of contracepting. Our experience in researching pre-transitional societies in sub-Saharan Africa and South Asia is that the usual reproductive behaviour of the human race over aeons has been to think of births and deaths as being essentially capricious and requiring little planning or consideration.

Our second theme is the lessons we have learnt from the study of recent European history. These lessons are of immense intellectual interest and are fundamental to an understanding of the West's social history. Few research initiatives have been as fortunate as the releasing of funds pledged to controlling contemporary population numbers for the study of demographic history.

Yet it is probable that contemporary activists and theorists have been more misled than guided by the European experience. That experience was, because of the West's level of economic development, the leading segment in the global fertility transition. In the circumstances it was carried out amidst individual and community ignorance about what was happening and how it could be better achieved. The means for contracepting were primitive or non-existent. Religion and political ideologies were pitted against the family limiters. Europeans were forced to learn to practise withdrawal and abstinence. They were also forced either to invent personal moralities to justify what they were doing or to acquiesce to some kind of philosophy of limited sinfulness.

The extraordinary aspect of the Western fertility transition is not that it happened, but how long it took to happen. Dubois, working in India in the late eighteenth century, marvelled that the local people did not worry as family size built up, and indeed did not seem threatened with greater economic deprivation, while European families watched the growth of their families with deep apprehension (Dubois 1928). The French fertility decline began a century earlier than any other national transition. The reason was almost certainly that the social upheaval and ferment of ideas during the revolutionary period loosened the stranglehold of traditional morality earlier than elsewhere and allowed people to justify, at least to themselves and their partners, their attempts to maintain or improve their living standards by controlling family size. It is highly improbable that large families were economically more oppressive in France of that time than in Britain or the Low Countries. What really has to be explained is the lateness of the British fertility decline. When that decline began at last in the 1870s, 72 per cent of the British lived in conurbations, and the real per capita income level was five times what it is in contemporary India and four times the level of contemporary Sri Lanka or Kenya. By then, four-fifths of the British labour force worked outside agriculture, several times the level found in most of contemporary Asia and Africa (see Table 1.1).

The important point is that pre-modern contraception did not come naturally, but had to be painfully learnt over a long period. In Asia and Africa only two societies—Japan and Sri Lanka—enjoyed a long enough period of economic growth and educational development for such methods as withdrawal and rhythm to play an important role in reducing fertility.

It was discovered in a family planning clinic in the Bronx in the early 1930s that European immigrants had previously used withdrawal before being offered modern contraception. This European experience led Frank Notestein to the conclusion that any society that found an advantage in limiting family size could use natural methods to control fertility (Stix and Notestein 1934, 1940). This was an immensely satisfying conclusion for social scientists who did not want technology transfer to determine fundamental social change. The concept is still being repeated, recently for example in an article published by an economist in *Population and Development Review* (Pritchett 1994: 27).

The concept of need leading to successful fertility control may be true over the longer period, but it certainly is not true in the shorter run. A South Indian population we studied was adamant that they could not have controlled their fertility before the family planning programme arrived and that it was nonsense to suggest that their parents' generation could have controlled fertility, or even have thought in such terms by regretting their inability to do so (Caldwell and Caldwell 1984). Our

TABLE 1.1 Socio-economic Measures for Great Britain in 1871 and Selected Asian and African Countries in 1982^a

	Great Britain 1871	Bangladesh 1982	India 1982	Sri Lanka 1982	Thailand 1982	Kenya 1982
Real per capita income (US\$) (1982 prices)	1,416 (100)	140 (10)	260 (18)	320 (23)	790 (56)	390 (28)
Male labour force outside agriculture (%)	80 (100)	26 (33)	29 (36)	46 (58)	24 (30)	22 (28)
Population in conurbations of over 500,000 (%)	72 (100)	6 (8)	9 (13)	4 (6)	12 (17)	9 (13)
Children of primary school age at school (%)	95 (100)	62 (65)	79 (83)	103 (108)	96 (101)	109 (115)
Infant mortality rate (per 1,000 births)	150 (100)	133 (89)	94 (63)	32 (21)	51 (34)	77 (51)

^a Measures shown in brackets are percentages of Britain in 1871.

Sources: Great Britain: Mitchell (1962); other countries: World Bank (1984). Real per capita income figures: Preston and Haines (1991: 199), drawing upon US Bureau of Census 1966, Series A, and assuming that the British 1871 per capita income was 60% of the US 1890-1900 level (based roughly on Preston and Haines 1991: 184-93).

earlier experience in pre-transitional South-East Asia and sub-Saharan Africa was similar. Family planning programmes may change the timing of fertility declines by only a few years or decades, an inconsiderable period in terms of social history, though one that may mean a difference of billions in the ultimate population of the world.

Our third thesis is not only that the fertility transition has been economically determined, but that its timing and pace have major social and ideological components. Furthermore, it can be understood only as a global phenomenon and not as separate national transitions. Certainly, there are basic economic forces at work. A fully subsistence economy based on family production and not threatened by the advent of schooling will inevitably find child labour of value and will not control its fertility. Similarly, a completely market-oriented economy, where there is little household production, where nearly all adult men and women sell their labour for wages to buy all household consumption from the market, and where children spend long years in training for this outside work, will inevitably have low fertility. 'Wealth flows theory' was developed to explain two points (Caldwell 1976, 1982). The first was that there are still societies—common in sub-Saharan Africa—where children's labour both is necessary, and more than compensates for their keep. These societies will quite logically be resistant to fertility control. The second point is that what determines the value or burden of children are economic considerations which cannot be deduced merely from the type of production, because they depend on social factors, such as attitudes towards children, which govern the balance of expenditure and receipts between the generations, including such community characteristics as attitudes towards sending children to school.

The timing of fertility transition depends on ideologies, both those that transform family relationships and those that determine attitudes towards fertility control, attitudes that result not only from an individual willingness to use contraception, but also from the ability of partners to discuss such matters.

Many social scientists regard their disciplines as being closer to real sciences if it can be shown that human beings react only to vast material forces. In fact, human beings are not only thinking beings who can largely avoid dangers and fashion their own ends, but ideological beings given to theorizing about changes and preaching the need for more changes along the same lines.

In this sense, the fertility transition can be understood only as a single global transition. Its first stirrings in Europe and in English-speaking countries of overseas European settlement found champions and publicists. People sought ideas and changed personal moralities, encouraged by the work of the Malthusian League and the publicity given to the 1877 Bradlaugh-Besant trial in England and a somewhat similar court case

in 1888 in Australia (Borrie 1948: 54). Later there was the work of the neo-Malthusian League in the Netherlands, of Marie Stopes in Britain, and of Margaret Sanger in America. These were true pioneers, but it was inevitable that the often desperate and guilt-ridden groping of individual couples towards contraception would find champions. It was equally inevitable that the movement would establish links with other ideologies such as the late nineteenth-century women's movement. It was also inevitable that rapid population growth after the Second World War would generate ideologies aimed at its control and movements funding and facilitating such control. There were many individual decisions, but it is impossible to imagine these movements not coming into existence as world population doubled in little more than a generation and threatened to double again.

Without this ferment of ideas, the onset of fertility transition in the West would not have passed so quickly from the urban rich to the urban poor and on to the rural populations, groups with very different economic challenges. The social class differentials at any given date were usually considerable, but this obscures such facts as that different social classes moved through the same fertility levels over a short period: in Australia in the 1890s the poor were only seven years behind the rich. However, the demographic transition halted, as the Princeton researchers have shown, at linguistic borders (Coale and Watkins 1986). What has not been as often noted is the near-simultaneity with which it spread through the English-speaking world so that, for instance, birth rates in America and Australia were identical for generations. In fact, the size of the English-speaking bloc and its early production of economists have meant that this population has been unusually active in promoting fertility control. For 200 years there has been a Malthusian strain in the thinking of all English-speaking societies. Human beings usually find their way out of difficulties and sustain their resolve by inventing justifying philosophies and ethics.

Much attention has been paid to the rapid growth of the global economy over the last half century. Not nearly as much attention has been paid to the even more momentous, and only partly related, growth of the global society. The spread of the idea of fertility control, and the beginning of the fertility transition in close to 90 per cent of the world's population, are insufficiently explained by economic change and can be fully explained only by the export of social systems and the ramification of ideas.

The search for materialist thresholds is frustrating. If we compare Britain in 1871 with a range of countries in Asia and Africa a century later when their fertility was beginning to fall or would soon fall, some surprising findings emerge (see Table 1.1). The comparison here will be with India, Bangladesh, Sri Lanka, Thailand, and Kenya. In terms of real per capita

income as measured by purchasing parity, Britain was at the start of its fertility decline, ten times as wealthy as Bangladesh, and almost twice as rich as Thailand. The proportion of its workforce working outside agriculture was four times that in Bangladesh or Kenya and more than double Sri Lanka's proportion. Its proportion of population living in conurbations with more than half a million inhabitants was eighteen times the proportion in Sri Lanka and even six times that in Thailand. Perhaps significantly, the only threshold that is similar is that of schooling: a century later Sri Lanka, Kenya, and Thailand exceeded the primary schooling levels of Britain at the earlier time, although India was somewhat below it and Bangladesh lower still. It may be pertinent that an acute American observer of the Australian scene in the early years of the Australian fertility transition reported from a great number of interviews with women that they explained their need to control family size almost entirely in terms of the changes wrought by universal schooling (Ackermann 1913). The only threshold that is consistently exceeded by today's developing countries is that of infant and child mortality. By the early 1980s even Bangladesh recorded an infant mortality rate below that of Britain in 1871, while India's was only two-thirds as great, Thailand's one-third the level, and Sri Lanka's one-fifth.

So what did produce the global fertility transition of the last third of the twentieth century? Compared with the earlier West, the developing world had only two socio-economic measures going for it: high levels of child education and low levels of child mortality. The power of these two forces should not be underestimated. Schooling makes children expensive and turns the family attention towards them, and low child mortality ensures that even small families are likely to survive: these are the only two socio-economic measures that currently distinguish sub-Saharan African countries where fertility is falling from those where it is not (Caldwell *et al.* 1992; Caldwell and Caldwell 1993). But this was probably not enough. In addition, national family planning programmes played a role. More important, and as the essential feature which set the stage for the programmes' success, was the fact that individuals and governments swung to the view that small families were a good thing and that contraception not only was not obnoxious but on balance was the path of moral and responsible behaviour. This was partly achieved by the spread of schooling and the media, especially by the latter reporting the population debate. We have said before that we believe fertility was talked down. An important part was played by specific investments in research and university teaching, which created a critical mass of population scientists whose work provided the ultimate basis for the media debate. Students from population courses in demography, sociology, and economics returned home to work on committees and planning boards and to represent their countries at international conferences (Caldwell and Caldwell 1986).

Our fourth proposition is that organized family planning programmes do speed up the process, usually beyond some threshold where the value of children is changing, child mortality levels have fallen, and contraception has become a matter of public knowledge. This was not widely the situation before about 1965, but since then fertility has been falling in much of the Third World. Perhaps not coincidentally, this was about the time when more effective methods of fertility control began to become available: the pill, the modern IUD, injectables, and suction abortion. The role of national family planning programmes has been not only to make contraception easily accessible, but to publicize its availability, to legitimize its use, and to proclaim the advantages to both parents and children accruing from smaller family size. The real success of national family planning programmes was in a great arc of Asian countries stretching from Korea and China down through South-East Asia to Bangladesh and India. Here national elites, long accustomed to providing moral leadership, pronounced fertility control a necessity. In Latin America, nearer to the original Western socio-economic thresholds, such programmes did not play an equally important role although the new contraceptives undoubtedly did.

Some economists, most notably recently Pritchett (1994), have proclaimed such programmes to be ineffective. Part of the argument is that the history of the West had shown that parents know how to restrict fertility once children impose sufficient economic burden (p. 27). This, we have already argued, is a misreading of the Western experience. The chief thrust of the argument is that measures such as 'ideal family size' and 'desired children' move downward as quickly as fertility control, thus showing that wishes and viewpoints are almost the sole determinant of such control. I believe this is a misunderstanding of what these useful but contentious survey measures signify. Contraceptive behaviour, again above some threshold, changes as contraceptives become more easily available, as neighbours employ them, and as authority figures urge their use.

As behaviour changes, so does fertility expectation and so do the figures that women give in response to the often somewhat ludicrous question about ideal family size. This may be a simplification, but to a considerable extent people learn by doing, and they also come to realize the likely end result of that doing. Pritchett also argued that access to family planning facilities was not important (pp. 27-9), although an examination of the Kenya situation found that the density of family planning services in the area where a person lived was the major determinant of contraceptive use (Brass and Jolly 1993: 123-67).

The international survey programmes have also been used to produce figures for the 'unmet demand' for fertility control. This is a useful concept for showing that family planning programmes would achieve more

if they were more user-friendly and provided a greater intensity of services. However, the concept without modification fails to distinguish between women who have little access to contraception and those who fear it, have religious or other moral objections, or have their decisions made for them by husbands or parents-in-law. Of course, all these reasons may provide targets for a comprehensive programme. However, the other objection is that, like the measures of desired family size, upon which it is built, unmet demand is a moving target. The very meeting of that demand creates further unmet demand.

Our discussion has centred on the programmes of open societies. Much as social scientists might dislike the finding, the experience of China and of India during the Emergency, especially in 1976, shows that governmental coercion can reduce fertility almost indefinitely. During the Emergency India's fertility fell as fast as China's ever has, and, doubtless, if China were to try to enforce a no-child policy, its fertility would fall even lower. Indonesia's more sophisticated programme nevertheless uses an indirect-rule administrative structure that goes well beyond the simple case of desired fertility leading to spontaneous regulation.

Finally, we have a few further, though brief, comments to make.

The first is that the area of greatest transition interest now is sub-Saharan Africa, where at present 10 per cent of the world's population live but where even the United Nations medium projection shows that population growing to one-fifth of the human race by the time the present burst of global population increase is over. Fertility has fallen in South Africa, Zimbabwe, Botswana, and Kenya, and possibly in three other very small southern African states, but these countries altogether contain less than one-sixth of the region's population, too few to show up statistically in the form of any regional fertility decline. Furthermore, fertility is falling only in those countries where fewer than 11 per cent of births result in deaths by 5 years of age, where at least 20 per cent of girls go to secondary school, and where there is a government family planning programme on a national scale. Doubtless fertility will fall in other parts of the region when these conditions are met, but, in present conditions of stagnant economic growth, there are only a very few other African countries likely to reach these levels in the next decade. We already know that the sub-Saharan African fertility transition will be very different from the classical model, that fertility will undergo similar falls at all ages, and that contraceptive practice among the unmarried will be an important aspect of the transition. There is evidence from South Africa, and increasing evidence from Kenya, that a successful sub-Saharan African transition may be dependent on clinical methods, especially injectables. The classical Asian national programme with its family planning clinics and its provision of services almost solely for married women is an unsuitable model for the region, although the most recent large-scale study seems to have

assumed precisely that model (Working Group 1993: 128–69). In East and southern Africa the AIDS epidemic has led to considerable confusion about the role of family planning programmes in these circumstances and there is still much to be resolved.

The present world population will almost certainly double, but what happens after that? Twenty-five years ago it seemed probable that either stationary population or continuing slow growth, with inevitable longer-term problems, would be the answer. Now that almost half of the world's population lives in societies with replacement or below-replacement fertility, it seems much more likely that there will be an indefinite future of slow population contraction (Caldwell 1994: 12). The formation of a global society, in which girls as well as boys are educated and women as well as men assume that they will work for wages outside the home, will ensure that.

The research needs are manifold. Every assertion in this paper needs testing in many places. But perhaps the most interesting and useful research is that on the onset of fertility transition in societies where it is just starting or has only recently started. The operation of family planning programmes is not a simple mechanistic process, and the interactions between these programmes and the population is a deeply under-researched area. Furthermore, that research has to go along with the erection of demographic transition theory which regards family planning programmes and the organized provision of contraceptives as an inevitable social phenomenon and not as an exogenous factor.

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PART II

Recent Insights into
Demographic Transition

The First Health Transition in Australia, 1880–1910

F. B. SMITH

Through the decades of the first white Australian health transition, roughly 1880–1910, colonial and state statistical officers commonly set their mortality returns beside figures from England and Wales, as markers of progress or retrogression. The communities the statisticians tabulated were offshoots of the United Kingdom, mostly only two generations old, living in warmer, drier climates on different soils; together they embodied an isolated, radically smaller, farming, mining, transport, manufacturing, and service economy functioning across prodigious distances from six or so nodes at port suburbia, all wired to London.

The statisticians' colonial readers, steeped in hereditarian and determinist climatological assumptions, showed considerable curiosity about how their Austral–Anglo–Saxon–Celtic offspring would turn out. And the Austral offspring were equally curious about how they measured up to their contemporaries at Home. 'Test' cricket matches were one measurement: mortality rates and life expectancies were another. In general, the cricket contests and mortality tables showed the colonies to be equalling—indeed, surpassing—the Old Country, but some comparators with English figures, e.g. typhoid fever mortality in Victoria in the 1880s, at rates about six times worse than those for London and the English great towns, worried local observers (Dunstan 1984: 292). None the less, comparative life expectancies and general death rates showed Australia to be the healthiest nation on earth.

These juxtapositions invite the reader to use them to test current hypotheses about the causes of the decline in mortality from infectious diseases in England and Wales. Thomas McKeown's thesis that medical intervention counted for little, and that the decisive contributions came from improved diet and shelter among the masses, was already fraying when it was challenged in 1988 by Dr Simon Szreter, who argued strongly for medical agency through central and municipal provision of preventive and curative services after 1870, particularly in relation to airborne pulmonary tuberculosis (McKeown 1976; McKeown and Lowe 1966; Szreter 1988, 1994; Guha 1994). Meanwhile, the tradition of medical triumphalism, which McKeown defied in the 1950s and 1960s, remains influential among

TABLE 2.1 The Top Seven Attributed Causes of Death in Australia, 1879/1892-1905/1910

	Victoria				New South Wales			Tasmania		Queensland				England and Wales			
	1879	1890	1898	1906-10	c.1880	1881	1905-09	1881	1890	1900	1910	1892	1910	1879	1890	1900	1910
1. Phthisis	Phthisis	Phthisis	Phthisis	Heart disease	n.a.	Phthisis	Phthisis	Old age	Old age	Old age	Old age	Phthisis	Digestive system	Bronchitis	Respiratory system	Bronchitis	Heart disease
2. Atrophy and debility (infants)	Heart disease	Enteritis	Enteritis	Cancer	n.a.	Bronchitis and influenza	Old age	Heart disease	Phthisis	Heart disease (various)	Heart disease (various)	Pneumonia	Urinary system	Phthisis	Circulatory system	Pneumonia	Respiratory system (bronchitis)
3. Diarrhoea (infants)	Accidents	Pneumonia	Pneumonia	Phthisis	n.a.	Old age	Enteritis	Phthisis	Atrophy and debility	Phthisis	Enteritis and gastro-enteritis	Diarrhoea	Respiratory system	Heart disease	Nervous system	Phthisis	Pneumonia
4. Accidents	Pneumonia	Heart disease	Heart disease	Congestion and haemorrhage of brain	n.a.	Atrophy (infants)	Accidents	Atrophy and debility	Atrophy and debility	Atrophy and debility	Cancer	Enteritis	Tuberculosis all forms	Age	Phthisis	Heart and circulatory system	Phthisis
5. Organs of circulation	Old age	Old age	Old age	Whooping cough	n.a.	Heart disease	Heart disease	Convulsions	Diarrhoea and debility	Cancer	Premature birth	Convulsions	Nervous system	Pneumonia	Convulsions	Old age	Cancer
6. Bronchitis	Diphtheria	Cancer	Cancer	Influenza	n.a.	Convulsions (infants)	Pneumonia	Pneumonia	Convulsions	Pneumonia	Other forms of tuberculosis	Endocarditic disease	Accidents	Atrophy and debility	Cancer	Cancer	Blood vessels
7. Pneumonia	Bronchitis	Accidents	Typhoid fever		n.a.	Diarrhoea	Cancer	Pneumonia	Bronchitis	Convulsions	Atrophy and debility	Premature birth	Cancer	Convulsions	Digestive system	Apoplexy	Old age

Sources: These listings are compiled from H. H. Hayter, *Victorian Year-Book 1879-80*: 152; Hayter, *Victorian Year-Book 1890*: 354; *Victorian Year-Book 1915-16*: 391; T. A. Coghlan, *The Wealth and Progress of New South Wales, 1892*: 802-3; Coghlan, *Wealth and Progress, 1900-01*: 1014; *Official Year Book of New South Wales, 1911*: 546; *Statistics of Tasmania 1881*: 200-1; *Statistics of Tasmania 1890*: 120-1; *Statistics of Tasmania 1910*: 133; Thornhill Weedon, *Queensland Past and Present, Brisbane 1898*: 119; *Statistics of Queensland 1910*: 10-11; *Forty-Third Annual Reports of the Registrar-General for England 1880*: 162; *Fifty-Third Annual Report ... 1890*: xi; *Sixty-Third Annual Report ... 1900*: 181; *Seventy-Third Annual Report ... 1910*: xxxix.

clinical teachers, health administrators, patients, and politicians, as public debates about health policies and book review and editorial columns of specialist journals and newspapers attest.

However, medical triumphalism and McKeown and Szreter seem inapt when we isolate and ponder the seven leading attributed causes of death over the period in Victoria, New South Wales, Tasmania, and England and Wales. Victoria is the best reported of the colonies; New South Wales rivals Victoria in population and economic attainment; Tasmania represents an older established, relatively immobile, much less populous community, akin to South Australia. Queensland is inadequately documented, and Western Australia's population is both poorly reported and too transitory to be manageable in this exercise.

The top seven causes of mortality (see Table 2.1) encompass between 40 and 66 per cent of the total classified mortality in each colony. The striking thing is that, pulmonary tuberculosis apart, the infectious diseases that figure so largely in the medical history literature appear in the top seven as minor contributors, or not at all.

The changing epidemiological understandings, nosologies, reporting mechanisms, and calculation practices echoed in these tables do not make the figures securely comparable over time within statistical jurisdictions, or even contemporaneously comparable between jurisdictions, but the well collected figures for Victoria, New South Wales, Tasmania, and England and Wales do suggest orders of magnitude over a wide variety of recognizable conditions and trends from which we can draw defensible inferences.

In the Australian context Tasmania is the exceptional case. 'Old age' and 'Heart disease' prevailed there, causes to be expected in an ageing community little affected by recent immigration, while attenuated by emigration of 20–40 year olds. The New South Wales and Victorian tables accord with the information available for Queensland: together, they differ markedly from the record for England and Wales. In Victoria, five of the top causes in 1879 had been in the seven since 1853, usually in the order they appear here; the two newcomers were 'Bronchitis' and 'Organs of circulation'. 'Phthisis' (pulmonary tuberculosis) had been first throughout. Combined, they accounted for 41 per cent of all registered deaths. Of the total deaths from all causes, about 50 per cent occurred at under 5 years of age. That proportion had fallen to about 22 per cent by 1911, and the percentage of deaths at age 60 and above had risen to over 50; this transition was slower and less dramatic in England and Wales, which still had 38 per cent of all deaths at under 5 and proportionately fewer, by a quarter to a fifth, people dying at over 65 than in Victoria (*Victorian Year-Book* 1879–80: 139; *Victorian Year-Book* 1915–16: 373–4; Mitchell 1962: 38–9).

Pulmonary tuberculosis occasioned 7–10 per cent of the total deaths in Victoria, New South Wales, Queensland, and South Australia until the

TABLE 2.2 Pulmonary Tuberculosis in New South Wales and Victoria: Annual Death Rates, 1870/75–1910/11^a

	New South Wales			Victoria	
	Males	Females		Males	Females
1875–79	1096	899	1870–72	1289	1062
1880–84	1238	987	1880–82	1533	1275
1885–89	1157	886	n.a.	n.a.	n.a.
1890–94	1024	726	1890–92	1573	1151
1895–96	924	657	n.a.	n.a.	n.a.
1904–08	740	616	1900–02	1351	872
1910	641	584	1910–11	898	761

^a Death rates per million population.

Sources: Mullins (1898, 9); *Official Year Book of New South Wales* (1911: 546); *Victorian Year-Book* (1915–16: 409).

early 1900s. Its prevalence presents one of the more inscrutable problems in this discussion. In New South Wales and Victoria, the 'Phthisis' death rate was recorded as rising steadily from the 1850s to the 1880s. These rates run at about three-fifths to two-thirds of those for England and Wales (Smith 1988: 7) (see Table 2.2).

The fall in phthisis mortality in the colonies—64 per cent for New South Wales over 1880–1910, 58 per cent for Victoria over the same period—was the largest for any specific illness during the transition. Taken with the fall in infant mortality, it constitutes the transition. The tuberculosis reduction notably diminished the overall mortality rates, from 15.46 per 1,000 to 9.71 per 1,000 in New South Wales, for example. In Victoria, among age groups particularly at risk to tuberculosis death (infants of both sexes, females 20–25 and males 35–45, who comprised large segments of a predominantly young population), there were falls in tuberculosis death rates for females in their early 20s of 52 per cent, and for males in their 30s of 51 per cent, taken with a 26 per cent reduction among males under 15 (overwhelmingly infants) and a 55 per cent reduction among young females. Together, these changes made enormous contributions to the prolongation of life and to the opportunities for chronic degenerative, invasive illnesses in later life (*Victorian Year-Book* 1915–16: 371).

Colonials liked to think that recently arrived British immigrants brought their consumption with them as a terminal illness and that Australia's warm, dry climate was a preventive, curative environment which induced immunity. William Thomson, an early believer in the infectiousness of the disease, disproved the colonial myth in the 1870s and 1880s (Thomson 1870, 1876). The myth persisted, despite his work and despite the accumulating evidence that most adult consumptives dying in Australia in this period were native-born or had resided in Australia for more than

five years. Possibly these victims were the more vulnerable because fewer of them had succumbed to the measles, scarlet fever, and respiratory infections that destroyed so many of their English and Welsh cousins. Equally, the lower rates of prior viral and bacterial illness among the Australians ought to have made them better able to withstand the tuberculosis germs. These problems can be sorted out only by finer local analyses than can be made here. We do know that females, except at ages 20–35, had lower mortality than males, particularly in infancy and ages 35–55. The striking point is that the incidence of terminal tuberculosis fell, while mass exposure continued. In the early 1920s a small sample of schoolchildren returned 70 per cent as positive reactors to the Von Pirquet test, and around the same time 61 per cent of hospital patients, apparently mostly in the under 30 age group, in Sydney, Melbourne, and Adelaide were positive (Penfold 1923: 266; Cumpston 1989: 284–5).

Phthisis was involved with poverty, both as cause and effect. In 1871 Thomson had observed that the higher Victorian tuberculosis mortality was registered in labouring-class South and North Melbourne. At the end of our period in 1909–11, notified cases, a useful but not infallible guide to incidence, were commonest in relatively poorly-housed, smoky, working-class Port Melbourne, Melbourne City and Fitzroy. Their rates were around 18.7 to 17.3 per 10,000, while upper–middle-class bosky Caulfield, Malvern, and St Kilda had rates of 5.2–6.7 per 10,000.

Overcrowding, which might have contributed to high, repeated doses of air and food-borne *Mycobacterium tuberculosis* in London or New York, was clearly present in Australian cities, but was not a salient problem in the Northern Hemisphere sense. North Melbourne had 37 persons to the acre in the late 1880s, Fitzroy 35, while comfortable suburbs in London and New York had 500 (Dingle and Rasmussen 1991: 28). Doses of bacteria acquired in shared accommodation, pubs, workplaces, and at sporting gatherings in big cities such as London might have been greater and more destructive.

Medical observers were hard put to explain the fall in tuberculosis mortality, but claimed credit for it none the less. 'Compulsory' notification of cases, introduced patchily after 1890 in Victoria, in South Australia after 1898 (by head of the family), in New South Wales in 1902, Tasmania in 1903, Queensland in 1905, and Western Australia in 1911 (*Commonwealth Year Book* 1915: 976), does not appear to have accelerated the advance in survival rates. W. G. Armstrong, the Sydney City Health Officer, boasted in 1908 that compulsory notification was 'working well' in the City, one of the few areas in New South Wales where the regulations were observed. 'We take credit . . . that we are ahead of the old country in some things, and we hope that before long we shall be able to show that compulsory notification is not only practicable but a necessary part of the armament for fighting pulmonary tuberculosis' (W. G. Armstrong 1908: 184).

Notification opened the door to visiting nurses. They might have reduced infection by instituting rules curbing open coughing and spitting, but it is hard to discern what else they might have accomplished, except to regiment the victim and his or her family. J. B. Trivett, the New South Wales statistician, claimed that the decline had occurred since 'the passing of the Dairies' Supervision Act of 1896, the Pure Food Act, 1908, the Diseased Animals and Meat Act of 1892 and the Public Health Act of 1896 and may be attributed to their operation' (Trivett 1912: 123). But the decline began before any of this chronologically heterogeneous, poorly enforced legislation. The non-pulmonary tuberculosis death rate was always low, 9 per 10,000 in 1888–96 on a rising trend; it fell dramatically in 1896, towards the 0.52 per 10,000 it attained around 1910. As most cases were under 5 years of age, the fall in the birth rate might have been at least as important. Moreover, the death rate from non-pulmonary tuberculosis diminished equally and simultaneously in colonies such as South Australia, which had little effective protective legislation at this time. Generally, the colonies lagged by about fifteen years behind British health legislation and its implementation: probably the colonies' better health made protective legislation less urgent; possibly the colonial political class was less concerned with hygienic responsibility.

Tuberculosis sanatoria were advocated through the 1890s and succeeding decades. The few that came into existence did little for the mortality rate. Despite their managers' pretensions to admit only 'early' curable sufferers, and their open-air exposure regimens and fat and milk diets, they had a 44 per cent patient death rate and further 35 per cent unaccounted for over the period 1900–4. The sanatoria might have separated some open cases from their families and thereby reduced severe infection among the children and workmates, but the effects must have been small: New South Wales in 1905 had about 84 beds in use, Victoria 85, Queensland 40, and South Australia 66 (Gault 1905: 35).

Medical intervention through government regulation might have lessened the general tuberculosis death rate over the long run through clean food rules, but overall it is difficult to see how doctors contributed anything to the containment of tuberculosis during the health transition. And from the 1920s onwards, their opposition to BCG vaccination probably kept the mortality and morbidity rates higher than they might have been.

We do not know if the bacillus changed in virulence over time, particularly whether it mellowed in the 1880s. However, the high British immigration during that decade and the preceding twenty years suggests that the proportions of persons previously exposed increased in the colonies, although the selective British group might also have had enhanced immunity. The fact remains that the death rate in the colonies and in Great Britain fell steadily. The best crude explanation asserts the impact of improved shelter, nutrition, and working conditions and a

TABLE 2.3 Phthisis Mortality Rates in New South Wales, 1894/98–1910^a

	Metropolis	Country
1894–8	10.26	6.99
1899–1903	10.04	7.14
1904–8	7.94	6.18
1910–	6.99	5.65

^a Death rates per 10,000 population.

Source: *Official Year Book of New South Wales* (1911: 546).

TABLE 2.4 Phthisis Mortality Rates in Victoria, 1868/77–1888/97^a

	Greater Melbourne	Extra-metropolitan districts
1868–77	21.71	8.53
1878–87	22.92	9.36
1888–97	18.53	9.92

^a Death rates per 10,000 population.

Source: McAdam (1899: 7).

reduction of tiredness and anxiety during the long run of rising real wages into and through our period from the 1870s in Australia and the 1880s in Great Britain. As yet we have only vague ideas about how to analyse these ameliorative components in action, either singly or synergistically. One indicator that the hypothesis has merit is the gradual fall of city phthisis rates towards equality with rural ones through the 1890s and early 1900s (see Table 2.3). The process was repeated in Victoria even more dramatically, particularly in light of the older male age structure of the countryside and the continuing smaller chances of infection in rural public places (see Table 2.4).

By 1910 heart disease and cancer had displaced phthisis as the worst single killers in New South Wales and Victoria. Heart disease had risen from fifth in New South Wales in 1891 and from outside the top seven in Victoria in 1879. Cancer went from seventh to third in New South Wales within the decade after 1900 and from sixth to second in Victoria between 1898 and 1906–10. Similar, if slightly less dramatic, transpositions occurred almost simultaneously in England and Wales.

'Heart disease' as a nosological entity varied in inclusiveness over time and between certifying doctors, but in Victoria in 1905 at least it was officially said to cover endocarditis, pericarditis, valvular disease, hypertrophy, fatty degeneration, syncope, and 'undefined heart disease' (*Victorian Year-Book* 1905: 375). Back in 1880 in Victoria, the only colony for which we have figures by age and sex in this period, heart disease,

TABLE 2.5 Deaths from Heart Disease in Victoria, by Sex and Age, 1910–1912^a

	35–45	45–55	55–65	65–75	75+	Avg. for all ages
Males	6.71	15.53	49.57	127.50	243.44	15.19
Females	7.10	15.63	36.22	107.21	238.36	13.58

^a Deaths per 10,000 population.

Source: *Victorian Year-Book* (1915–16: 406).

TABLE 2.6 Heart Disease and Cancer in Three Australian States, 1881–1911

	1881		1911	
	Total (rounded)	% of whole population	Total (rounded)	% of whole population
New South Wales	103,000	13	305,000	18
Victoria	154,000	17	274,700	20
Tasmania	22,000	18	35,230	18

Source: calculated from Vamplew's *Australians Historical Statistics* 1987: 33, 36.

at 9.06 per 10,000, was already a leading cause of death in persons aged 45 and over (*Victorian Year-Book* 1881–2: 229). By 1910 the proportions read as listed in Table 2.5. The concentration of heart disease mortality at higher ages also applied in New South Wales (Coghlan 1897–8: 717).

The numbers of people at risk of death from heart disease and cancer increased both absolutely between 1881 and 1911 and as percentages of their respective colonial populations (see Table 2.6). Older females outnumbered males and increased their preponderance throughout the period; although the Australian population generally remained a much younger one, at a third between 20 and 40 in 1900, than its Western European counterparts (*Victorian Year-Book* 1902: 180; Allen 1902: 9–10).

The various forms of heart disease had various precursor or ancillary conditions. Doctors recognized links between high blood pressure in arterial disease, rheumatism, tuberculosis, and bacterial infections in pericarditis and valvular disease, together with streptococcal infections in the case of endocarditis. Altogether, the morbidity associated with heart disease through years before death might well have approached the morbidity associated with consumption, in which death commonly supervened in the later nineteenth century within two to five years after diagnosis. Even so, colonial branches of British friendly societies, in the later 1880s or early 1890s at least, reported weeks of sickness per member per annum

TABLE 2.7 Cancer Deaths in Australia and Britain, 1876/90–1910^a

Tasmania		Victoria		New South Wales		England and Wales	
1876–80	4.6	1876–80	4.5	1875–79	2.7	1875–80	5.1
1881–85	5.0	1881–85	4.5	1880–84	2.7	1881–85	5.5
1886–90	4.9	1886–90	5.3	1885–89	3.5	1886–90	6.3
1891–95	4.8	1890–92	5.8	1890–93	4.1	1891–95	7.1
1896–1900	5.5	1894–98	6.6	1895–1900	5.1	1896–1900	7.7
1901–03	5.7	1906	7.5	1904–08	6.7	1901–05	8.4
1910	6.3	1910–11	8.3	1910	7.0	1910	9.1

^a Deaths per 10,000 population.

Sources: *Statistics of Tasmania* 1881: 200–1; 1882: xvi; 1900: 289; 1910: 133; *Victorian Year-Book*, 1878–80: 152; 1886–7: 344; 1895–8: 736; 1910–11: 514; Allen 1902: 9–10, Coghlan, 1899–1900; *Seven Colonies . . .*, 1896: 282; *Wealth and Progress of New South Wales*, 1898–9: 625; Mullins 1896: 1; *Official Year Book of New South Wales* 1911: 550; *British Parliamentary Papers*, 1911: X, cxxvii; *Seventy-Third Report of the Registrar-General for England and Wales* 1910: lx.

at only two-thirds the rate of their British parents (Coghlan 1897–8: 729). This contrast is the more striking because New South Wales case-fatality rates for scarlet fever, diphtheria, and typhoid were only about half those of London rates (Coghlan 1901–2: 512). Better nutrition and living conditions might well explain these disparities. Tracheotomy and antitoxin administration, which Australian practitioners seem to have used more readily in the early 1890s than their British counterparts, might well have reduced the colonial diphtheria mortality (Clubbe 1895: 17); but it is hard to think of any clinical intervention that would have lowered scarlet fever or typhoid death rates in either setting, beyond insistence on isolation and good nursing, and medical pressure on municipal authorities to clean up the neighbourhood, make safer food regulations, and set higher housing standards. Males and adolescent females might have been helped by the introduction of shorter hours of work and better factory and labouring conditions.

The increase in cancers might have had particular contributory factors within the general increase of the population at risk. Tasmania and Victoria, with their older population structures at the start of the transition, led New South Wales, while England and Wales had worse rates than all the colonies (see Table 2.7).

The commonest reported sites of terminal cancers in women and men were external or palpable ones. Less diagnosable internal cancers turned up at hospital post mortems, and doctors were agreed that cancers were under-diagnosed and registered. The data are fairly consistent between 1895 and 1915 (see Table 2.8). The prominence of these sites is replicated in the British data (*British Parliamentary Papers* 1904, XV: xlvi [Scotland];

TABLE 2.8 Cancer Mortality in Australasia/Victoria, by Parts of Body Affected, 1895–1915^a

Australasia, 1895		Victoria, 1915	
Females	Males	Females	Males
Uterus	33	Stomach	34
Stomach	14	Liver	14
Breast	13	Tongue	7
Intestine	4	Neck	4
Abdomen	3	Intestine	3
		Stomach, liver	32
		Breast	16
		Female genitals	15
		Intestines, rectum	11
		Skin	4
		Buccal cavity	1
		Stomach, liver	40
		Intestines, rectum	14
		Buccal cavity	13
		Skin	6

^a Percentage of total cancer cases per sex.

Source: *Australasian Medical Gazette* (Mullins 1896: 4); *Victorian Year-Book*, 1915–16: 416.

1916, V: 359). But female deaths in Britain continued to exceed male ones throughout the period, while in Australia, at least by the 1890s, male deaths from cancer outnumbered female deaths by about a fifth, rather higher than the higher general masculinity ratio. In Australia deaths from cancer in both sexes were highest at ages 50–70 (Mullins 1896: 2).

Some of the cancer sites imply mechanisms that also induce heart disease, namely diet, prior viral infections, and smoking. The relatively well-waged Australian population, living among relatively low food prices, consumed startlingly high amounts of sugar, butter and cheese, and meat. In 1887, for instance, the inhabitants of New South Wales ate 95 pounds of sugar per head, both directly in tea and with other comestibles and in the form of confectionery and additives (Coghlan 1897–8: 300). Australians' teeth were generally carious, broken from childhood, and false from early adulthood, but probably not worse than those of their English and Welsh cousins (Stirling 1905: 1; *Australasian Medical Gazette* 1910: 225). This condition must have made the task, beginning at breakfast, of gnawing through the 281.5 pounds per head annually of chops, steak, sausages, and offal in New South Wales in the late 1890s (370 pounds in Queensland) literally a daily grind. The British in the same period had the highest per capita meat consumption in Europe, at 109 pounds. The Australians' meat was rarely refrigerated at home, it was dirty in its preparation and delivery, and was often tainted (Muskett 1893/1987: 58–9).

The Australians also each consumed 19 pounds of butter and cheese a year and used 109 pounds of salt, some of it at least in pickling and canning/bottling. These items were eaten accompanied by potatoes and boiled cabbage, but apparently almost no other vegetables, cooked or fresh (Muskett 1893/1987: 167–8). The slum-dwellers in Louis Stone's novel *Jonah* (1911) seem to have eaten only boiled peas in a soup to accompany

a meat pie from a street vendor. The market stalls seem largely to have stocked potatoes, onions, cabbages, beans, cauliflowers and rhubarb, all meant for boiling. Fresh fruit must have been available in season, but I have found no mention of it. Before the 1920s there is little evidence in suburbs or country towns of nurseries or plant shops supplying vegetable seedlings and an equal want of evidence for backyard vegetable patches. Probably, shortage of water was the powerful obstacle. Chinese market gardeners who were prepared to do the stigmatized work of planting, weeding, watering, and using human manure seem to have produced the bulk of such vegetables as came to market; thereby they might have preserved domestic health better than the doctors. The authorities did little to help these contributions to nutrition: indeed, they frequently harassed the gardeners when European neighbours complained about the smells the work generated (Bate 1983: 359).

New South Welshmen and Victorians each smoked about 2.5 pounds of tobacco a year during the same decade; Queenslanders smoked nearly 3 pounds (Coghlan 1900–1: 738). Tobacco production in Victoria rose by over 500 per cent between 1886 and 1910 (*Victorian Year-Book* 1886–7: 461; 1910–11: 762). Cigarette manufacture in New South Wales rose twelve-fold between 1900 and 1910 (*New South Wales Statistical Register* 1910: 636). The British smoked at less than half the Australian rate at 1.4 pounds per head, but the Americans and the Dutch smoked nearly 4.5 pounds each (Muskett 1893/1987: 79).

The 13 : 1 disparity in buccal cavity cancer deaths in Victoria in 1915 might well reflect differential smoking rates between the sexes. This difference might also have been enlarged by specific alcohol consumption patterns (B. K. Armstrong 1985: 127). Victorians drank 1.12 gallons of spirits per head annually in the mid-1880s, less than the Dutch but slightly more than the Swedes. At around 16.5 gallons of beer, they swallowed about two-fifths the volume consumed by their British counterparts (*Victorian Year-Book* 1886–7: 462). By 1906–10 consumption of spirits and beer had fallen by over a third in Australia, while it remained nearly constant in the United Kingdom. Yet, bafflingly, cancer increased (*Victorian Year-Book* 1910–11: 393). Authorities sought to tax alcohol, control sellers, and punish the inebriated, but beyond that it is again difficult to see what else they could have attempted in that political situation. Similarly, apart from forbidding sales to youngsters and taxing tobacco, authorities and their publics saw neither the need nor the possibility of controlling smoking in private.

However, some astute doctors had suspicions. Dr Chenhall, of the Royal Hospital for Women in Sydney, noted that climate, soil, altitude, diet, and race seemed unrelated to the incidence of cancer, but he added that floor of the mouth cancers were common in women in India and Ceylon, where they chewed betel nut and slept with a plug in their

TABLE 2.9 Death rates from cancer in New South Wales, 1891

Place of birth	No. of persons in New South Wales aged 21+	Death rate from cancer 1 in . . .
England and Wales	134,263	748
Scotland	32,365	594
Ireland	73,522	562
Germany	9,142	538
Australasia	280,692	2,738

Source: Mullins (1896: 4).

mouths: perhaps the absence of such an irritation among Australian women accounted for the differential buccal cancer rates? But overall, he thought personal hygiene was the key to the puzzling distribution of cancers (Chenhall 1911: 435). Lung cancer, at a male rate three times that of females, was first reported in the statistical returns in 1932 (*Australian Demography Bulletin* 1936: 82).

One oddity in the pattern of cancer mortality was the preponderance of persons born in the United Kingdom and Germany. Cancer death rates in 1893–4 are shown in Table 2.9. The low cancer rates among native-born Australians look genuine enough, but they were also an outcome of the relatively high concentration of immigrants in age brackets over 45—although not, it would appear, entirely. Dr Mullins noticed, in the 1893 figures, a peculiarity that Dr Bruce Armstrong also observed in the 1980s: cancer deaths among immigrants, distributed by years of residence in Australasia, were low for under 5 years, a sort of ‘healthy migrant’ effect, and then peaked at 10–15 years’ residence and again at over 20 years’ (Mullins 1896: 4; B. K. Armstrong 1985: 127–8).

Heredity, by analogy with consumption, seemed to be demonstrated in Australia by an instance of cervical cancer traceable over three generations on two continents (Mullins 1896: 6). But if cancer was heritable, the high British rates should have been replicated in the colonies. Some Australian doctors thought that the good antipodean climate ‘prevents the development of the growth’; others pointed out that many cancer sufferers of British origin had lived in Australia for 40–60 years. Others surmised that young Australian parents were fitter than their British counterparts and therefore more able to transmit to their children ‘a greater power of resisting disease’. Cancer remained a mystery in itself, beyond prevention, except for the advice to wear veils and stay out of the sun (Mullins 1896: 7).

Doctors could do little to save victims. They subjected women to severe surgery for breast cancers, with poor results (Ryan 1899: 254). They also excised cancerous parts of the genitals, tongue, lip, neck, and skin, with apparently varied outcomes (Chenhall 1911: 436). Here again,

TABLE 2.10 Falls in Death Rate in Victoria by Age Groups 1891/1900–1902/11

Age group	% fall
0–10	33
10–15	14
15–20	18
20–25	26
25–35	27
35–45	15
45–55	15
55–65	20
Avg.	21

Source: *Victorian Year-Book*, 1915–16: 372.

TABLE 2.11 Female Death Rates in Australia from Tuberculosis and Cancer, 1881–1910^a

	Tuberculosis	Cancer
1881	11.2	3.7
1885	11.3	3.5
1890	9.7	4.4
1895	8.7	5.2
1900	7.7	6.7
1905	6.9	6.2
1910	6.3	7.2

^a Deaths per 10,000 population.

Source: Chenhall (1911: 432).

the McKeown–Szreter controversy seems irrelevant to what was turning out to be a major cause of morbidity and death.

These increases in chronic terminal illness occurred within a general shrinkage of the death rate at all ages between 1891 and 1902–11. The shrinkage probably started earlier, but it is hard to measure before the 1890s (see Table 2.10). These falls resulted mainly from the retreat of pulmonary tuberculosis and the reduction in infant mortality occasioned by diarrhoea, atrophy, and convulsions. Heart disease and cancer grew as threats as adults survived the attacks of tuberculosis that would have killed them in earlier decades. The relative rates for Australian women illustrate the transition (see Table 2.11). This process can also be demonstrated from death rates for men in England and Wales (see Table 2.12).

The fall in infant mortality constitutes the other major part of the health transition (see Tables 2.13 and 2.14).

TABLE 2.12 Male Deaths per 1,000,000 from Tuberculosis and Cancer in England and Wales, 1901–1909

	1901	1903	1905	1907	1909
Pulmonary tuberculosis	1487	1427	1347	1341	1270
Cancer	691	732	756	781	826
Both diseases	2178	2159	2150	2122	2096

Source: Chenhall and Knibbs in Chenhall (1911: 432).

TABLE 2.13 Infant Mortality Rates in Australia and Britain, 1880–1910^a

	New South Wales	Victoria	Tasmania	England and Wales
1880	113.6	118.8	112.3	153
1885	131.2	125.8	112.6	138
1890	104.5	117.4	105.6	151
1895	105.9	102.4	81.6	161
1900	103.3	95.4	80.0	154
1905	80.6	83.3	80.7	128
1910	74.7	76.9	101.7	105

^a Deaths per 1,000 live births.

Source: Vamplew's *Australians Historical Statistics* (1981: 58); *Seventy-Third Annual Report of the Registrar General . . .*, 1910: 5.

TABLE 2.14 Legitimate Births per 1,000 Married Women aged 15–45 in Australia and England/Wales, 1881–1911

	New South Wales	Victoria	Tasmania	England and Wales
1881	n.a.	303.4	n.a.	147.6
1883	340.5	n.a.	n.a.	n.a.
1891	298.9	281.9	315.9	132.6
1901	235.6	238.7	254.6	114.5
1911	229.7	231.5	244.8	98.0

Source: *Official Year Book of New South Wales*, 1905: 234; 1913: 122; *Victorian Year-Book*, 1912–13: 396; 1915–16: 357; *Statistics of Tasmania*, 1900: 298; Mitchell (1962: 29).

The saving of life over the period ensued from the lower number of offspring born to each married woman, related in part to a rise of two-and-a-half years in the female age at marriage, in Victoria and New South Wales, between 1891 and 1901, and to a wider spacing of births. The rate of fall in the Victorian legitimate birthrate during 1891–1901 was 15 per cent (*Victorian Year Book* 1915–16: 359); in New South Wales

TABLE 2.15 Fertility and Infant Death Rates in Labouring, Commercial, and Professional Districts of Melbourne, 1910/11–1914

District of Melbourne	Births, 1911–14 ^a	Deaths under 1 year, 1910–14 ^b
Footscray	33.17	8.11
Richmond	28.29	10.23
Brunswick	26.50	9.50
Camberwell	18.87	5.58
Malvern	21.46	5.51
Kew	23.34	4.76

^a Births per 1,000 population.

^b Deaths per 1,000 births.

Source: *Victorian Year-Book*, 1915–16: 364, 382.

it was 31 per cent (Larson 1994: 39). Smaller completed families allowed better nurturing.

The Commonwealth census of 1911 showed that the ‘professional’—clergy excepted—and ‘commercial’ classes led the way with completed families below parity and that families whose male breadwinner was in ‘Building, Agricultural and Pastoral Pursuits’ or ‘Dependent on Natural Guardians’ contained 1.5 to 2 or more children above the average (*Commonwealth Census* 1911: 1189). In Melbourne, labouring-class suburbs recorded higher fertility and infant death rates than professional and commercial class districts (see Table 2.15).

The contraception that enabled the transition to smaller families with better life chances was achieved against medical and patriotic denunciation. In Victoria, statisticians McLean in 1902 and Drake in 1906 had already noted the congruity between low birth rates and low death rates, but their observations were ignored by alarmists such as Timothy Coghlan and Octavius Beale. F. Antill Pockley, President of the Medical Congress in 1911, lamented the decline in the fertility of the ‘thrifty . . . physically and mentally desirable classes’ compared with that of the ‘improvident and degenerate’, and worried about the future of the race (Pockley 1911: 97). Selfish wives were evading their ‘maternal duty’, declared J. S. Elkington, Chief Health Officer of Tasmania, in 1907 (Elkington 1907: 205).

None the less, this class differential in births and deaths justified doctors and politicians in claiming some credit for the fall in infant deaths and advocating ‘mothercraft’, a new word in Edwardian Australia and Britain. Dr W. F. Litchfield told the Australasian Medical Congress that ‘obscure climatic influence’ might explain the fall in infant diarrhoea summer mortality allied to the medically sponsored Dairies’ Supervision Act and improved water supply; but he admitted that the chronology of these events challenged his explanation. He did not mention the fall in

fertility (Litchfield 1911: 1055). Dr W. G. Armstrong attributed the saving of infant life to his 'female sanitary inspectors'' visits to parents of babies in 'poorer districts'. But his chronology was faulty too: the visitors' scheme was developed only after the fall in the death rate, and the visitors' advice became usable only in a spaced, smaller family (W. G. Armstrong 1907: 48). The editor of the *Victorian Year-Book* for 1910–11, A. M. Laughton, attributed the improvement in infant mortality to 'the improved milk supply' (*Victorian Year-Book* 1910–11: 506; P. M. Smith 1989: 94–103).

The milk supply was a promising candidate, because the fall in infant deaths was concentrated in the areas of 'marasmus', 'bronchitis', 'convulsions', and 'violence', where the incidence during 1891–3 fell between 40 and 80 per cent, while the rates of 'prematurity', 'congenital defects', and 'diarrhoea' remained stable. Perhaps the crucial advance in milk quality came when mothers with fewer, spaced offspring became able to breast-feed their babies more comfortably.

The persistence of 'diarrhoea' probably was related to the swarming flies which, in summer particularly, transferred *E. coli* strains and other organisms from abundant, exposed food wastes and horse and human dung to infants' mouths and food. Dwellings were unscreened, awaiting the invention of flywire (it became available in the mid-1920s) (Boyd 1952: 94, 148–9). Water for drinking and cleansing remained scarce and dubious. Much of it was collected in barrels filled from roof gutters, and in contaminated wells. Cast iron and galvanized iron tanks seem to have been available from the 1860s (Hancock 1972: 80), but they were expensive and apparently were not widely used until the 1890s (Anon. 1980: unnumbered; Richards 1993: 55).¹ In the case of domestic water supply in relation to the McKeown–Szreter controversy, the creation of cleanish reservoirs and safe reticulation systems in cities and country towns decisively bettered the people's health at all ages (Kelly 1978: 130–3; Dingle and Rasmussen 1991: 102–4).

In Melbourne and the main provincial towns, where rural domination of colonial and state parliaments constrained urban infrastructure investment, particularly in water supply, enteric fever joined the top seven causes of death in 1906–10, after its death rate had already begun to fall from its high point in the early 1890s (see Table 2.16). Enteric fever's apparent rise was partly the outcome of the series of hot summers with many flies, but largely the statistical product of the reduction in tuberculosis and infant death rates. None the less, enteric killed over 1,000 Victorians and sickened nearly 7,400 others between 1890 and 1904, permanently invalidating some of them (Millard 1905: 405–6).

Doctors, engineers, journalists, and some politicians used the panic and the shame in 'Marvellous Melbourne', as its boosters not unreasonably described it, to improve the water supply and sewage system to combat the disease, although astute contemporaries believed that main drainage

TABLE 2.16 Enteric Fever in Melbourne, Bendigo, and London, 1890–1911

Melbourne	Bendigo		London	
	Cases per 10,000	Deaths per 10,000	Deaths per 10,000	Deaths per 10,000
1890–4	34.93	4.35	1890	1.39
1895–9	32.76	3.38	1895	1.36
1900–4	14.00	1.48	1900	1.59
1911	6.19	0.57	1910	0.43
		1910–15	26.1	

Sources: Jamison (1908 II: 98–102); *Victorian Year-Book*, 1915–16: 394–5; *Seventy-Third Annual Report . . . Registrar General . . . England and Wales*, 1910: 65.

and sewerage achieved more of the victory than the better water service, especially in reducing the infections carried by house flies. Doctors also advocated the domestic boiling of milk (Jamison 1911: 627–8; Willis 1911: 595–6). Clinical intervention looks unlikely to have reduced the mortality; indeed, the doctors' favoured 'long . . . cold bath' treatment, forced on 'timid' patients to lower the fever, might well have increased it (Hare 1889: 265). Equally, their administration of heroic quantities of turpentine, eucalyptus, digitalis, calomel, ether, and alcohol can hardly have helped a patient in collapse from diarrhoea, headache, and exhaustion (Hare 1887: 163). Their best contribution came with T. L. Bancroft's advice to isolate the sufferer and disinfect the excreta (Bancroft 1887: 162–3).

This account is congruent with McKeown's: but he is oddly silent on the epidemiological, political, and economic origins of the reforms to water and waste services (McKeown and Lowe 1966: 10–11, 36). Szreter has a much keener sense of the British local and national politics of this amelioration and in this instance makes better sense of the chronology of the process (Szreter 1988: 26–9), as do Luckin and Hardy (Luckin 1984: 102–19; Hardy 1993: 172–90). The engineering that made such progress possible is still under-studied (Coward 1988: 73–116).

The strikingly destructive role of bronchitis, 'the English disease' (it appears to have covered other 'chest infections' at various times), in England and Wales seems crudely comprehensible in terms of dampness, cold, smoke, and overcrowding, but it is surprising that 'bronchitis' also figures so prominently, in 1900 at least, in drier, warmer Australia, and that Australia continued to report much higher rates than the USA, Japan, and France into the 1960s, while England and Wales still led the table. Age structure, uncommon distribution of occupations—severe chronic bronchitis used to be a miners' affliction—patterns of smoking, and particular distributions of moulds, would none of them, individually or in combination, seem to provide explanations. Was it perhaps more prevalent

TABLE 2.17 Accident or Negligence Death Rate in New South Wales, 1884/88-1910^a

	Males	Females	All persons
1884-88	13.41	4.34	9.32
1889-93	11.90	3.70	8.14
1894-98	10.33	3.69	7.23
1899-1903	9.47	3.39	6.53
1904-08	7.79	2.97	5.54
1910	8.05	2.53	5.51

^a Deaths per 10,000 population.

Source: *Official Year-Book of New South Wales*, 1911: 556.

among British-born Australians than the native-born, as cancer seems to have been? 'Bronchitis', which might have included asthma, although that understanding was formalized only in 1968, was a much more insidious, less preventable, killer than authorities once thought.

The prominence of mortality from 'Accidents and external violence' in New South Wales and Victoria and its absence from the top seven causes of death in England and Wales marks a salient disparity. This category covered industrial and domestic accidents and suicide in addition to other lesser causes. Suicide in Victoria in 1879 comprised about 9 per cent of the total violence/accident group (*Victorian Year-Book* 1879-80: 166). 'Fractures and contusions' made up almost half the accidental deaths in New South Wales in 1885-91, and males ended their lives through accidents seven times more frequently than females (Coghlan 1892: 805).

The overall accident or negligence death rate for New South Wales during 1884-1910 can be seen in Table 2.17. Even allowing for varying reporting and legal procedures, the differentials between Australian and overseas rates are striking. Australia's population had a distinctively high masculinity ratio; and a third of its people were aged between 20 and 40 in 1901. The colonies with the highest masculinity proportions and younger populations and highest alcohol consumption rates, Queensland and Western Australia, had the worst lethal accident and negligence counts. Country rates were higher than metropolitan ones; fractures and cuts were common in bush work, and doctors were few and often distant by a day or more on a horse-drawn vehicle. Victorian miners had an accident case-fatality rate of 1 in 3 in 1880, a rate that had already been halved after the Regulation of Mines statute in 1873 (*Victorian Year-Book* 1880-81: 269). In New South Wales on census day 1891, about 1,500 persons, at the rate of 131 per 10,000, were 'infirm by reason of accident'. Males outnumbered females 5 to 1 (Coghlan 1892: 726). A further 1,770 were 'crippled by a loss of one or more useful limbs', among whom males outnumbered females two to one. The next largest section of the

TABLE 2.18 Suicides in New South Wales, 1884–1911^a

	Males		Females		All persons	
	No. of deaths	Rate per 10,000	No. of deaths	Rate per 10,000	No. of deaths	Rate per 10,000
1884–88	428	1.62	96	0.44	524	1.09
1889–93	519	1.68	110	0.42	629	1.11
1894–98	679	2.01	169	0.57	848	1.34
1899–1903	651	1.81	142	0.44	793	1.16
1904–08	719	1.83	160	0.45	879	1.17
1911	164	1.89	39	0.49	203	1.22

^a Deaths per 10,000 population.

Source: *Official Year Book of New South Wales*, 1912: 137.

'accident' category was 'drowning', with about 25 per cent of the total, males again exceeding females 1.5 to 1. Among other 'accidental' deaths, 'falls', 'vehicles and horses', 'weather' (mostly sunstroke) among them, females surpassed males only in 'death from burns', the third largest category, where females were particularly vulnerable at young ages, at around 1.75 to 1.

The pressures on males in a risk-taking, masculinist society also emerge in the relatively high colonial suicide rate. Again, the highest rates, e.g. 1.9 and 1.7 per 10,000 in 1910–12, were recorded in Western Australia and Queensland, respectively. Only Tasmania, with an older, settled, less masculinist population and a lower rate of alcohol consumption, had suicide rates below the English rate of around 0.92 per 10,000 (Coghlan 1904: 842–3; Anderson 1987: 80–1). Even so, the majority of Australian suicides among both sexes occurred in the over-45 age groups, with the peak above 65; although females had a peak at ages 15–19. This distribution persisted into the late 1930s, at least (Coghlan 1897–8: 720; *Official Year-Book of New South Wales* 1912: 137; Derrick 1941: 668) (see Table 2.18).

The mid and late nineteenth-century preoccupation with communicable diseases as the main threats to be tackled made sense, because civil engineering and the new bacteriology made the problems solvable. Aseptic practice and diagnostic bacteriology also ratified medical consequence in health policy. But this regime also muddled and confined policy-making. The accumulating morbidity that followed lengthening life expectancies, particularly with the retreat of tuberculosis and redirections in infant mortality, occurred despite professional interventions, not because of them: none the less, doctors took the kudos and shaped public-health spending patterns.

The killers that rose to the top during the transition were generally beyond care or even palliation: enteric was among the few that were

preventable, diphtheria among the curable. My estimations make the health transition a more complicated set of gains and losses than earlier surveys have indicated. This finding is unsurprising, given that the transition is such a momentous episode in the history of humankind. Historians will need new insights and tools to use the epidemiological and clinical evidence about the more mysterious, growing component of the transition, the cancers, rheumatisms and mental illnesses. Genetic endowments and viral impacts presumably will become important explanatory units. Australia's precocity in the transition, its manageable population size and reasonable documentation make this continent a good place to start.

NOTE

1. I am indebted to Geoffrey Blainey and Anne Warr for help with this point.

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The Demise of Universal Marriage in East and South-East Asia

GAVIN W. JONES

More than a decade ago, Smith (1980) noted that, although a great increase in age at marriage had occurred in many Asian countries, levels of permanent non-marriage in Asia were quite low, with virtually no evidence of any increase over time. Rates of female non-marriage¹ at ages 45–49 were only 1 or 2 per cent with only three exceptions: Sri Lanka, Myanmar, and the Philippines. A more recent study by the United Nations stressed that 'Asia remains a region where conformity to universal marriage norms has been maintained and prevalence of marriage for both sexes has remained very high in most countries' (United Nations 1990: 184).²

The purpose of this paper is to demonstrate that, although this generalization was once true, it has now become misleading. Over the past two decades some dramatic changes have taken place in South-East and East Asia: non-marriage for women is becoming much more common, and in many of the big cities it is even more common than it is in Western countries, notwithstanding the sharp declines in marriage prevalence in Western countries in recent times. The main reason why observers have been slow to recognize this fact has been that the index of non-marriage normally used (percentage of women remaining unmarried near the end of their reproductive period) reflects the high marriage probabilities in the past, since the most active marriage activity for a cohort reaching age 45–49 occurred a quarter-century earlier. Such a measure will fail to reflect major changes in non-marriage from older to younger cohorts until those younger cohorts are in their forties. But it is possible to detect such changes ten or fifteen years earlier, by studying trends in percentages remaining unmarried in their early thirties, a statistic that bears a fairly predictable relationship with the percentage of the same cohort remaining unmarried in their forties.

The paper will deal mainly with non-marriage for women, though the trends in non-marriage for men will also be dealt with, more briefly. The focus will be on the two main cultural blocs of East and South-East Asia: the Confucian world of sinic cultures, and the Malay world. In the first, the family tended to be more patriarchal, with women largely restricted

TABLE 3.1 Trends in Never-Married among Females aged 30-34 to 45-49, Countries of South-East and East Asia (%)

Age group	1960	1970	1980	1990
<i>Philippines</i>				
30-34	11.6	8.9	11.9	13.4
35-39	8.1	6.3	8.0	8.7
40-44	7.6	6.0	7.0	7.1
45-49	7.1	5.6	6.7	6.1
<i>Thailand</i>				
30-34	6.7	8.1	11.8	14.1
35-39	4.2	5.2	7.3	9.6
40-44	3.1	3.9	5.3	7.0
45-49	2.6	3.0	4.1	5.2
<i>Peninsular Malaysia^a</i>				
<i>Chinese</i>				
30-34	3.8	9.5	13.3	15.8
35-39	2.7	5.7	7.6	9.1
40-44	2.6	3.4	5.8	6.4
45-49	2.5	2.4	4.6	5.7
<i>Malays</i>				
30-34	1.1	3.3	7.9	10.2
35-39	0.8	1.9	3.8	5.8
40-44	0.6	1.1	2.2	4.1
45-49	0.6	0.7	1.7	2.3
<i>Brunei Malays^b</i>				
30-34	n.a.	10.0	15.0	15.0
35-39	n.a.	7.0	11.0	13.0
40-44	n.a.	5.0	9.0	11.0
45-49	n.a.	4.0	6.0	9.0
<i>Indonesia^c</i>				
30-34	n.a.	2.2	3.4	4.5
35-39	n.a.	1.4	1.9	2.7
40-44	n.a.	1.2	1.4	2.0
45-49	n.a.	1.0	1.2	1.5
<i>Taiwan^d</i>				
30-34	2.1	6.6	11.4	11.1
35-39	1.5	7.4	3.9	6.0
40-44	1.3	4.6	2.2	3.6
45-49	1.0	n.a.	n.a.	1.9
<i>Japan</i>				
30-34	9.6	7.2	9.1	13.9
35-39	5.6	5.8	5.5	7.5
40-44	3.1	5.3	4.4	5.8
45-49	1.9	4.0	4.4	4.6
<i>Republic of Korea</i>				
30-34	0.5	1.4	2.7	5.3
35-39	0.2	0.4	1.0	2.4
40-44	0.1	0.2	0.5	1.1
45-49	0.1	0.1	0.3	0.6

TABLE 3.1 Cont'd

Age group	1960	1970	1980	1990
<i>Sri Lanka</i> ^e				
30–34	8.3	10.9	16.0	n.a.
35–39	4.8	5.8	9.2	n.a.
40–44	4.3	4.7	6.0	n.a.
45–49	3.4 ^f	n.a.	n.a.	n.a.

^a 1960 refers to 1957; 1990 refers to 1991.

^b 1970, 1980, and 1990 refer to 1971, 1981, and 1991.

^c 1970 refers to 1971.

^d 1960 refers to 1956.

^e 1960, 1970, and 1980 refer to 1963, 1971, and 1981.

^f 1946.

Sources: Census reports, various countries and years; Leete (1993: table 1).

to the home. Most Chinese families were extended (joint or stem) at some point in their life cycles (Freedman 1970; Wong 1978; Huang 1992). In the Malay world, there was more emphasis on the elementary nuclear family, the kinship system was bilateral, and women had greater autonomy (Geertz 1961; Javillonar 1978; Karim 1987; Go 1992).

THE TRENDS

Until recently, non-marriage could be considered an aberration in the resolutely family-centred world of South-East and East Asia. Among Malay-Muslim populations of Indonesia, Malaysia, Singapore, and Southern Thailand, half of any given cohort of women were married before reaching age 18 (Jones 1994: chapter 3); the proportion of women remaining never-married in their forties was less than 1 per cent, and those few women generally remained unmarried because they were suffering from physical abnormality or mental illness. Among Chinese populations, non-marriage was similarly rare (around 1 per cent of women aged 40–44 in Taiwan, for example, though higher in the special situations of Hong Kong and Singapore). In the Philippines non-marriage was more acceptable, largely, it would appear, because of the value placed by Catholicism on celibacy and on taking holy orders. This also accounted for relatively high non-marriage rates in countries such as Italy, Spain, and (especially) Ireland; but non-marriage rates in the Philippines (7.6 per cent never-married among women aged 40–44 in 1960) were only half those of Italy and Spain.

Tables 3.1 and 3.2 present the available information on trends in non-marriage for women in South-East and East Asian countries and large cities from 1960 to 1990. Though the trends and levels differ greatly, the

TABLE 3.2 Trends in Never-Married among Females aged 30-34 to 45-49, Major Cities of South-East and East Asia (%)

Age group	1960 ^d	1970	1980	1990
<i>Metro Manila</i>				
30-34	20.9	21.1	18.6	19.5
35-39	14.7	14.5	13.0	13.4
40-44	11.7	11.6	11.2	10.7
45-49	10.3	9.8	10.5	9.0
<i>Bangkok</i>				
30-34	11.9	17.3	25.1	29.4
35-39	7.7	10.5	15.4	20.4
40-44	5.3	7.5	10.7	15.6
45-49	4.5	5.7	8.1	11.3
<i>Bangkok Outer Zone^a</i>				
30-34	10.1	12.8	18.6	22.3
35-39	6.1	8.6	12.2	15.9
40-44	4.7	6.2	8.6	12.0
45-49	3.8	4.8	7.0	9.0
<i>Jakarta</i>				
30-34	n.a.	4.2	7.0	8.7
35-39	n.a.	2.3	3.4	4.7
40-44	n.a.	2.1	2.5	3.0
45-49	n.a.	1.6	1.5	2.5
<i>Singapore (Chinese)^b</i>				
30-34	4.7	11.1	17.8	22.4
35-39	4.3	5.8	9.3	15.6
40-44	5.2	3.8	6.7	12.3
45-49	6.2	3.3	4.6	7.9
<i>Singapore (Malays)^b</i>				
30-34	1.7	3.9	12.7	13.4
35-39	1.1	2.2	5.6	10.1
40-44	1.4	1.7	2.6	7.3
45-49	0.9	1.1	1.7	3.8
<i>Kuala Lumpur (Chinese)</i>				
30-34	n.a.	14.6 ^d	17.1	23.3
35-39	n.a.	8.9	10.2	15.1
40-44	n.a.	5.5	7.4	10.0
45-49	n.a.	4.5	6.0	7.3
<i>Kuala Lumpur (Malays)</i>				
30-34	n.a.	6.9 ^e	11.1	14.4
35-39	n.a.	3.7	6.2	9.2
40-44	n.a.	2.1	3.9	6.7
45-49	n.a.	1.4	2.8	3.7
<i>Taipei^f</i>				
30-34		5.2	9.5	18.6
35-39		3.3	5.4	10.8
40-44		3.1	3.9	7.0
45-49		3.4	4.2	3.6

TABLE 3.2 Cont'd

Age group	1960 ^d	1970	1980	1990
<i>Hong Kong</i> ^c				
30–34	6.0	5.6	11.0	24.8
35–39	5.0	3.0	4.5	11.6
40–44	5.9	2.9	2.7	7.3
45–49	7.4	3.8	2.3	3.9

^a The *changwats* of Samut Prakarn, Nonthaburi, Pathum Thani, Samut Sakhorn, and Nakhon Pathom. Computed from 1% data tapes of the 1980 and 1990 Censuses.

^b For Singapore, 1960 refers to 1957.

^c For Hong Kong, the data refer to 1961, 1971, and 1981.

^d Metro Manila 1960 does not include some of the areas later included, such as Pasay and Quezon City.

^e Kuala Lumpur 1970 includes Kuala Lumpur, Petaling Jaya and Kelang.

^f For Taipei, 1970 refers to 1974.

Source: Census Reports, various countries and years; Leete (1993: table 1).

general trend is one of rising rates of non-marriage. The most striking rise is for women in their thirties, but only, it would appear, because there has not yet been time for it to work its way fully into the forties age groups. Between 1960 and 1990, the percentage of women remaining single at age 30–34 rose from 2 to 11 per cent in Taiwan; from 7 to 14 per cent in Thailand; and from 2 to 15 per cent in Peninsular Malaysia. In the Republic of Korea, Indonesia, and the Philippines the rises were much more modest, though in the Philippines the 1990 figure (13 per cent) was among the highest in the region.

The non-marriage rate at ages 45–49 is significant in showing the proportion of women who complete their potential childbearing period without ever marrying. Though much lower, this had nevertheless reached 5 per cent in Thailand, 6 per cent in the Philippines, 2 per cent in Taiwan, and 4 per cent in Malaysia by 1990, rates well above those of earlier decades. These rates can confidently be expected to go higher in future, because of the sharp rise in non-marriage among women aged 30–34, and the close relationship between non-marriage rates at age 30–34 and those at ages 40–44 and 45–49 in the same cohort.³

Not surprisingly, these trends were particularly marked in some of the large cities of the region. In 1990 the percentage of women aged 45–49 remaining never-married had reached 9 per cent in Manila, 11 per cent in Bangkok, 5 per cent in Singapore, and 4 per cent in Hong Kong—a far cry from the claim of the United Nations study that Asia continues to be characterized by nearly universal marriage. But even more striking are the percentages of women remaining single at age 30–34—almost 20 per cent in Manila, 25 per cent in Hong Kong, 29 per cent in Bangkok, 22 per cent among the Singapore Chinese and 19 per cent in Taipei.⁴ Such

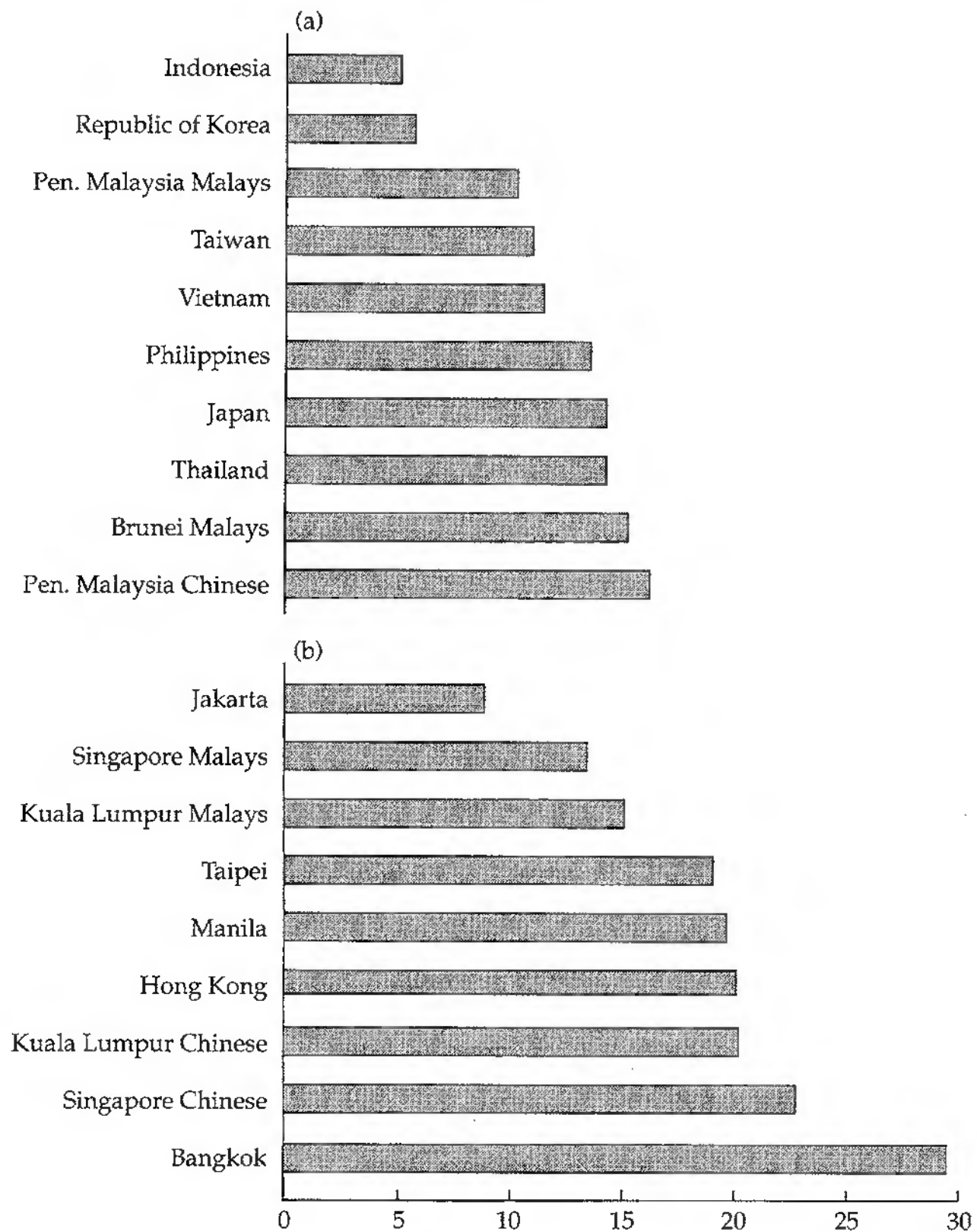


FIG. 3.1 Countries and major cities of East and South-East Asia: percentages never-married among women aged 30-34, 1990

(a) Countries

(b) Cities

high proportions remaining single at this age—with their corollary that non-marriage proportions will continue to rise for women in their forties—have major implications for traditional family life, for fertility, and for the role of women.

Figure 3.1 shows the gradation in proportions non-married for females aged 30-34 in 1990, for countries of South-East and East Asia (in the upper half of the figure) and for various large cities of the region (in the

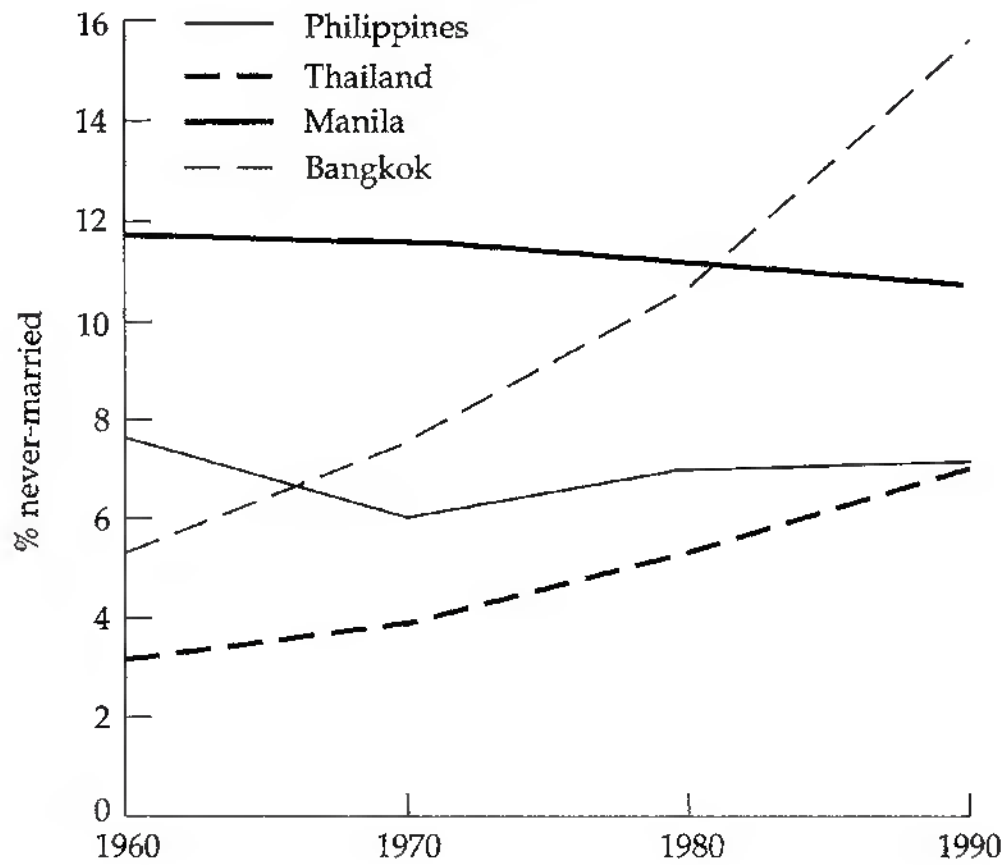


FIG. 3.2 Trends in percentages of females never-married at ages 40-44, Philippines and Thailand and their capital cities, 1960-1990

lower half).⁵ The wide range is the most outstanding feature. In particular, levels of non-marriage in the Republic of Korea and Indonesia, and in their largest cities Seoul (currently the world's twelfth largest city) and Jakarta (expected to be the world's tenth largest city by the year 2000), remain quite low, whereas in Thailand and Japan, and in the major cities of Bangkok, Singapore, and Hong Kong, they are very high. In Malaysia and Singapore, there is a wide difference between the two main ethnic groups, the Chinese and the Malays, but even the Malays have much higher rates of non-marriage than are found in Indonesia. It should be noted here that Vietnam is included in Fig. 3.1 but not in Tables 3.1 and 3.2 because there are no time trend data. However, it is likely that proportions of women never-married have risen sharply at ages over 30 because of the severe marriage squeeze in Vietnam consequent on male-selective war losses and emigration (Goodkind 1994).

The differences in trends in non-marriage in Thailand and the Philippines (and in their main cities, Bangkok and Manila) deserve comment. As shown in Fig. 3.2, although the percentages never-married in 1990 did not differ greatly between the two countries, they had reached this situation through very different routes. In the Philippines, non-marriage had traditionally been relatively high, though it was continuing to rise. In Thailand, non-marriage was not a traditional pattern, and the rise towards the 1990 levels was a very steep one. The non-marriage rates for Bangkok municipality are now so high that it is worth investigating the situation in the outer parts of the Bangkok Metropolitan Region, defined

as the five surrounding provinces, to determine whether high rates of non-marriage are confined to the population living in the city proper (see Table 3.2). Though somewhat lower than in Bangkok, the rates are still very high—for example, 22 per cent non-married at age 30–34 in 1990, compared with 29 per cent in Bangkok proper. Thus, throughout the entire Bangkok Metropolitan Region, whose 1990 population exceeded 8 million (15 per cent of Thailand's population), rates of non-marriage for females are very high indeed.

A particularly interesting group to consider is the Malay–Muslim population of South-East Asia, which as noted earlier has traditionally had very young and universal marriage for women. In most cases, the percentage never-married at ages 45–49 remained low in 1990, but important changes were already in evidence: over the 1980s the never-married percentage in this age group rose substantially to 9 per cent among Brunei Malays, and doubled among Singapore Malays and Peninsular Malaysia Malays. Brunei had been far ahead of the other Malay–Muslim populations in non-marriage as far back as 1970. For Malay women aged 30–34 in Singapore and Peninsular Malaysia, however, a rise in proportions never-married had been strongly in evidence since 1970, more than doubling over the 1970s in Peninsular Malaysia and more than trebling in Singapore, followed by more modest rises over the 1980s. By contrast, in Indonesia and among Southern Thai Muslims, the percentages still single at age 30–34 remained very low in 1990 (Jones 1994: table 3.1).

The higher rates of non-marriage in the large cities have already been noted. Another relevant variable is the educational level of the women concerned. Though evidence is limited, college-educated women have very high levels of non-marriage in a number of studies, for example in Singapore (Quah 1989) and the Philippines (Xenos and Gultiano 1992: 22). There is more evidence for Malaysia (Jones 1994: 99) and Thailand (Chamratrithirong 1984; Guest and Tan 1994), both of which show a marked gradation in proportions of women never marrying by educational level. For example, among Peninsular Malaysian Malay women aged 30–34, the key break point is the beginning of secondary school; fewer than 7 per cent of those with six or fewer years of education remained unmarried, compared with 15 per cent of those with seven years or more of education. Among Thai women aged 40–44 in 1990, the proportion never-married ranged between 5 per cent for those with none or primary-school education and 12 per cent for those with secondary education to 19 per cent for the tertiary educated. The rise in proportions non-married between 1970 and 1990 had an important compositional element—i.e. the increased proportion of women in the educational categories where non-marriage had always been more common—but there was also a steady though unspectacular rise in the age-standardized

TABLE 3.3 Bangkok and Jakarta Metropolitan Regions: Proportion of Women Never-Married by Age and Level of Educational Attainment, 1980 and 1990

Year and age	Educational level (%)			
	None ^a	Primary	Secondary	Tertiary
<i>Bangkok^b</i>				
1980				
30-34	26.3	16.8	28.0	40.7
35-39	9.8	12.8	17.3	25.4
40-44	7.5	10.2	15.2	17.6
45-49	5.4	8.7	18.3	23.8
1990				
30-34	22.2	20.4	25.9	43.4
35-39	14.9	14.6	19.6	27.3
40-44	13.8	10.3	12.8	22.9
45-49	7.6	8.0	15.3	21.4
<i>Jakarta</i>				
1980				
30-34	4.3	5.7	9.6	19.3
35-39	2.0	2.9	5.6	10.8
40-44	1.3	3.3	4.6	10.6
45-49	1.0	1.7	2.8	9.6
1990				
30-34	5.1	5.8	10.3	27.2
35-39	3.2	3.5	5.5	13.3
40-44	1.7	2.4	3.6	9.4
45-49	1.3	2.5	3.3	6.7

^a Includes incomplete primary.

^b Bangkok Metropolitan Region includes the Bangkok municipality and the surrounding *changwats* of Nonthaburi, Pathum Tani, Sumut Prakan, Samut Sakhon, and Nakhon Pathom.

Source: Computed from 1% data tapes of the 1980 and 1990 Population Censuses of Thailand, and 5% data tapes of the 1980 and 1990 Population Censuses of Indonesia.

proportions never-married in the uneducated and primary educated groups⁶ (Guest and Tan 1994: tables 1.1, 1.4).

Table 3.3 shows the results of further analysis of census data for Thailand and Indonesia to check whether the importance of education holds when urban-rural residence is controlled for. In the case of Bangkok, the table refers to the wider Bangkok Metropolitan Region, as defined above. Not too much importance should be attached to the uneducated, who are a very small group. For women with primary, secondary, and tertiary education, there is a clear gradation from quite substantial non-marriage proportions for the primary-educated to phenomenally high rates for those with tertiary education. More than one-fifth of the tertiary-educated were still non-married in their forties even in 1980. Perhaps

equally striking is the fact that one in ten women with only primary education remained never-married in their early forties. Non-marriage in the Bangkok metropolis, then, is not a new phenomenon, but was already well established in 1980. There was actually not much change in non-married proportions in each educational and age group between 1980 and 1990. The rise in the overall Bangkok rates reflects mainly the increased proportion of women in the better-educated categories which have higher non-marriage rates.

In Jakarta, although the prevalence of non-marriage is much lower than in Bangkok, there are very sharp differences according to educational attainment—much sharper than in Bangkok. It is among those with secondary, and particularly tertiary, education that non-marriage rates are quite high. As in Bangkok, there was not much change in non-married proportions in each age/education group between 1980 and 1990, although there was a rise at age 30–34 among the better educated groups. It is these groups that are increasing rapidly in size, and thus will have increasing weight in the overall non-marriage rate. Thus, the 27 per cent never-married at age 30–34 among the tertiary educated in 1990 is not only likely to result in much higher never-married rates for the tertiary educated aged 40–44 in ten years' time than the 9 per cent recorded at this age group in 1990; but also, as a larger component of *all* women aged 40–44, their high non-marriage level will ensure a rapid rise over the 3 per cent never-married among this age group in 1990.

What of non-marriage for males? Historically, in Europe non-marriage for males was quite high in those countries where non-marriage for females was high.⁷ In the countries of East and South-East Asia, universal marriage has been the custom for males as well as females, though later age at marriage has typically left a higher proportion of males than females non-married in their thirties. The recent sharp rise in non-marriage among females in countries such as Thailand and Hong Kong does not appear to have been mirrored in corresponding rises among males (Xenos and Gultiano 1992). In Thailand males have certainly shared in the rise up to their early or late thirties, but most eventually marry (Guest and Tan 1994). But Thailand is not 'typical' in this respect; in fact, there does not seem to be any 'typical' pattern. The Malaysia and Singapore Chinese resemble Thailand and Hong Kong in showing a relatively greater rise in non-marriage for females than for males in their forties, although (as in Hong Kong) non-marriage is now very prevalent for males in their thirties, and quite high for those in their forties (see Tables 3.4 and 3.5). In Korea, Indonesia, and the Philippines, the modest increases in non-marriage for males have more or less paralleled those for females, from a low base in Korea and Indonesia and a higher base in the Philippines. By contrast, in Japan the increase in non-marriage of those in their thirties and forties has been much greater among males than among females.

TABLE 3.4 Trends in Never-Married among Males aged 30-34 to 45-49, Countries of South-East and East Asia (%)

Age group	1960	1970	1980	1990
<i>Philippines</i>				
30-34	11.4	13.1	14.4	16.9
35-39	6.1	7.1	8.6	8.8
40-44	4.1	4.8	6.1	5.9
45-49	3.2	3.7	4.7	4.5
<i>Thailand</i>				
30-34	8.8	9.8	10.9	16.4
35-39	4.5	5.2	5.6	8.3
40-44	3.0	3.1	3.7	4.7
45-49	2.3	2.3	2.7	3.2
<i>Peninsular Malaysia^a</i>				
<i>Chinese</i>				
30-34	16.5	18.9	21.6	31.6 ^a
35-39	10.7	9.8	10.5	16.2
40-44	8.9	6.5	7.3	9.5
45-49	10.5	5.5	6.1	6.2
<i>Malays</i>				
30-34	4.8	6.9	10.0	14.2 ^b
35-39	2.9	3.3	4.6	6.3
40-44	2.4	2.1	3.0	3.5
45-49	1.9	1.5	2.4	2.2
<i>Brunei Malays^c</i>				
30-34	n.a.	n.a.	12.0	15.0
35-39	n.a.	n.a.	7.0	6.0
40-44	n.a.	n.a.	5.0	5.0
45-49	n.a.	n.a.	4.0	4.0
<i>Indonesia</i>				
30-34	n.a.	6.1	6.1	9.4
35-39	n.a.	3.0	2.6	4.6
40-44	n.a.	2.1	1.6	3.4
45-49	n.a.	1.8	1.1	2.9
<i>Taiwan^d</i>				
30-34	14.7	n.a.	12.5	22.9
35-39	9.7	n.a.	6.4	15.0
40-44	8.1	n.a.	5.1	5.8
45-49	5.6	n.a.	6.5	4.2
<i>Japan</i>				
30-34	9.9	11.7	21.5	32.6
35-39	3.6	4.7	8.5	19.0
40-44	2.0	2.8	4.7	11.7
45-49	1.4	1.9	3.1	6.7
<i>Republic of Korea</i>				
30-34	4.7	6.4	7.3	13.9
35-39	0.9	1.2	1.7	3.8
40-44	0.3	0.4	0.9	1.5
45-49	0.2	0.2	0.4	0.8

TABLE 3.4 Cont'd

Age group	1960	1970	1980	1990
<i>Sri Lanka</i> ^e				
30-34	26.1	25.7	25.6	n.a.
35-39	13.1	13.5	13.2	n.a.
40-44	10.3	9.3	8.6	n.a.
45-49	7.4	8.0	7.1	n.a.

^a 1960 refers to 1957 and 1990 refers to 1991.

^b Includes Sarawak and Sabah.

^c 1970, 1980, and 1990 refer to 1971, 1981, and 1991.

^d 1960 and 1970 refer to 1956 and 1966.

^e 1960, 1970, and 1980 refer to 1963, 1971, and 1981.

Source: Census reports, various countries and years; Leete (1993: table 1).

TABLE 3.5 Trends in Never-Married among Males aged 30-34 to 45-49, Major Cities of South-East and East Asia (%)

Age group	1960 ^e	1970	1980	1990
<i>Metro Manila</i>				
30-34	19.8	20.2	15.5	20.0
35-39	11.3	11.1	9.0	10.6
40-44	7.2	6.0	6.5	6.8
45-49	5.7	5.5	5.2	4.9
<i>Bangkok</i>				
30-34	19.9	21.0	23.5	30.7
35-39	11.4	10.8	11.9	19.4
40-44	7.4	6.6	7.4	12.9
45-49	6.2	4.9	5.2	8.9
<i>Bangkok Outer Zone</i> ^a				
30-34	12.2	14.9	16.0	23.2
35-39	6.9	8.6	8.4	12.3
40-44	4.3	5.3	5.6	7.0
45-49	3.7	3.7	4.4	4.9
<i>Jakarta</i>				
30-34	n.a.	10.6	12.8	17.5
35-39	3.3	5.1	4.9	7.9
40-44	3.3	3.6	2.3	4.8
45-49	2.0	3.3	1.9	3.7
<i>Singapore</i> ^b				
<i>Chinese</i>				
30-34	15.6	23.3	22.6	36.4
35-39	9.3	11.8	11.4	18.4
40-44	6.7	7.7	8.8	10.5
45-49	7.5	6.2	7.0	n.a.
<i>Malays</i>				
30-34	10.4	14.2	16.3	21.1
35-39	6.5	7.0	7.6	10.3
40-44	5.0	4.9	5.2	6.5
45-49	4.5	3.7	3.9	n.a.

TABLE 3.5 Cont'd

Age group	1960 ^e	1970	1980	1990
<i>Kuala Lumpur^c</i>				
<i>Chinese</i>				
30-34	16.7	22.4	23.0	n.a.
35-39	10.5	11.3	11.2	n.a.
40-44	8.4	7.5	8.1	n.a.
45-49	8.6	5.4	6.4	n.a.
<i>Malays</i>				
30-34	7.4	12.6	12.5	n.a.
35-39	4.4	4.9	5.0	n.a.
40-44	3.7	2.4	4.1	n.a.
45-49	2.9	2.4	2.9	n.a.
<i>Taipei</i>				
30-34			14.1	28.0
35-39			7.9	11.3
40-44			6.1	6.1
45-49			7.5	4.1
<i>Hong Kong^d</i>				
30-34	n.a.	34.5	27.3	49.5
35-39	n.a.	19.5	15.2	19.1
40-44	n.a.	11.3	11.9	10.9
45-49	n.a.	7.2	9.2	6.9

^a The *changwats* of Samut Prakarn, Nonthaburi, Pathum Thani, Samut Sakhorn, and Nakhon Pathom; computed from 1% data tapes of the 1980 and 1990 Censuses.

^b For Singapore, 1960 refers to 1957.

^c For Kuala Lumpur, 1960 data actually refer to 1957; 1970 includes Kuala Lumpur, Petaling Jaya, and Kelang; 1957 refers not to Kuala Lumpur but to whole Selangor; 1970 refers to towns with a population > 75,000, in Selangor.

^d For Hong Kong, the data refer to 1971, 1981, and 1991.

^e Metro Manila 1960 does not include some of the areas later included, such as Pasay and Quezon City.

Source: Census Reports, various countries and years; Leete (1993: table 1).

The detailed data by education for Bangkok and Jakarta throw further light on the differences between females and males in patterns of non-marriage (Tables 3.3 and 3.6). In the Bangkok metropolitan region, the uniquely high non-marriage rates for educated women (those with secondary and tertiary education) aged in their forties are highlighted by the much lower rates of non-marriage for males of equivalent age and education. Yet in their thirties, especially at ages 30-34, the differences are much less; it is as though there is a rush into marriage by the remaining unmarried educated males once they reach these ages, whereas this is much less so for educated females. A similar pattern is observable for Jakarta in 1980, though by 1990 the male-female differences had narrowed because it was the non-marriage proportions for secondary- and tertiary-educated males that showed the greatest rise over the decade. It must be

TABLE 3.6 Proportion of Men Never-Married in the Bangkok and Jakarta Metropolitan Regions, by Age and Level of Educational Attainment, 1980 and 1990.

Year and age	Educational attainment (%)			
	None ^a	Primary	Secondary	Tertiary
<i>Bangkok</i>				
1980				
30-34	35.9	15.5	23.1	35.3
35-39	14.9	10.0	11.0	19.2
40-44	10.4	5.7	6.3	8.5
45-49	7.2	4.2	5.5	5.6
1990				
30-34	42.4	23.0	28.2	37.3
35-39	23.1	14.5	18.6	21.0
40-44	10.4	6.5	8.8	8.9
45-49	8.1	4.3	4.7	6.1
<i>Jakarta</i>				
1980				
30-34	8.8	9.4	15.3	17.4
35-39	3.8	4.0	5.8	5.9
40-44	2.0	2.0	2.6	2.5
45-49	1.3	2.1	2.5	2.3
1990				
30-34	10.9	10.8	19.3	32.9
35-39	6.2	6.7	8.1	11.8
40-44	4.8	3.9	5.0	6.2
45-49	3.9	3.1	3.7	4.9

^a Includes some primary.

Source: derived from data tapes of Thailand and Indonesian Population Censuses, 1980 and 1990, supplied by the National Statistics Office, Thailand, and the Central Bureau of Statistics, Indonesia.

borne in mind that, with heavy immigration, characteristics of the educated groups could change substantially over the decade.

REACTIONS TO THE RISE IN NON-MARRIAGE

It is widely recognized in the region that the rise in female non-marriage represents a major break with the past, and that it poses challenges to traditional culture, to relationships within the family, and to official policy. One of the more interesting debates occurred in Peninsular Malaysia in 1991, following the revelation that there were 60,000 Malay women aged 30-34 (10 per cent of the age group) who had not yet married. In the spate of newspaper articles and letters to the editor that followed, the

overwhelming view was that the failure of women to marry by these ages was a serious problem. Many assumed that the non-marriage was non-volitional, caused by a lack of potential partners or a lack of opportunity to meet potential partners in settings favouring the development of close attachments. These reactions reflect traditional Malay culture's difficulty in entertaining the idea of non-marriage or delayed marriage as a life option. Many articles and letters stressed that Islam requires its followers to marry and raise a family, and that Malay culture is based on family life.

The general response to the evidence of the non-married 30–34 year olds was to seek ways to assist them to marry. An extreme reaction from the traditionalist side came from the director of the Islamic Religious Department of the state of Perlis, who at a seminar in August 1991 urged women to allow their husbands to take second, third, or fourth wives as a way of tackling the problem and also of preventing extramarital affairs. Matchmaking bureaux were set up under various Islamic auspices, and religious officials were asked to comment on the propriety of women proposing marriage to men. The head of one Islamic marriage bureau commented that many of those who make use of the bureau cannot find suitable partners: they have been busy studying and then working, and

find it difficult to find time to socialize. There are also those whose religious convictions discourage them from going out on a date with members of the opposite sex. Many of these single people know that the task of matchmaking was traditionally placed on parents' shoulders. However, many parents, due to changing times and attitudes, have discarded this practice, thinking that their offspring would want to find their own marriage partners. But there are still those who need a little help. (Simon 1991)

In all this discussion, two important points were missed by most commentators. First, given the strong preference among Malay men to marry a wife younger and less educated than themselves (because education is not seen to make a woman a good wife), and among Malay women not to 'marry down', the rapid rise in the number of young women with secondary and tertiary education may well have led to a marriage squeeze for this group. This was particularly likely in the cities, where the pool of educated young women was augmented by migration, leading to a localized shortage of potential spouses. Secondly, not all women unmarried at this age lacked suitors; many of them chose to live alone because they gave priority to their careers.⁸

It was not only in Islamic societies in the region that an awareness was growing that delays in marriage and, ultimately, increasing non-marriage were linked to the demise of the arranged marriage system. In Taiwan, for example, fully two-thirds of the marriages of the women born in the

early 1930s were totally arranged by the parents, but this had declined to just over one-tenth of the marriages of women born during the early 1960s. This was related to rising age at marriage and rising proportions remaining non-married into their thirties and forties. Between 1980 and 1990, the percentage of women aged 35–39 who had ever married decreased from 96.1 to 92.5 per cent. The authors of a recent book on the Taiwanese family are perhaps unduly cautious in drawing the conclusion that significant numbers of today's young adults may not marry (Thornton and Lin 1994: 211), because they show elsewhere in the book that a continuation of 1989 age-specific marriage rates would lead to a doubling of the 1990 percentage single at ages 45–49, and this effect could be reinforced by a further decline in marriage rates (p. 222). They do note that, even if marriage remains almost universal, the continued upward shift in age at marriage means that substantial fractions of Taiwanese men and women will remain single during a large part of their early life course (p. 211).

WHY THE ALMOST UNIVERSAL INCREASE IN NON-MARRIAGE?

It is frequently argued that permanent non-marriage emerges in association with a late-marriage pattern, because late marriage and non-marriage result from the same underlying changes (Dixon 1978; Smith 1983; Watkins 1984). If this is the case, then the factors usually invoked to explain delayed marriage can equally well be used to explain increasing non-marriage. Four examples might be cited. First, where the economic feasibility of marriage is high, both the prevalence and the timing of marriage will be affected. Secondly, where marriage is highly desirable—in part because of the absence of attractive social or economic alternatives, particularly for females—it will be not only earlier for females, but also more prevalent. Thirdly, shortage of potential partners over an extended period will not only raise age at marriage but also reduce prevalence. Fourthly, wherever marriage decisions are controlled by parents, marriage will be more prevalent.

Certainly, it is *possible* to have considerable increases in age at marriage without this leading to increased levels of permanent non-marriage. This appeared to be happening over some time in East and South-East Asia, but, as argued earlier, probably only because of the 'recognition delay' resulting from use of non-marriage at ages 45–49 as the indicator. The factors used to explain delayed marriage in the region, then, have considerable relevance in explaining increasing non-marriage.

East and South-East Asia have experienced extraordinarily high rates of economic growth over the past three decades. Strong efforts to develop

human resources, of which expansion of education has been a key element, have contributed to this strong economic performance (Ogawa *et al.* 1993). Since non-marriage has long been more prevalent in urban areas and among the more highly educated, the trends over recent decades have led to higher rates of non-marriage as a purely compositional effect: a rise in the proportion of urban and educated populations.

From a behavioural, rather than a purely statistical, perspective, the main issue is whether the tendency to greatly delay and ultimately avoid marriage is similar for both males and females, or whether instead it derives more from imperatives operating mainly on either males or females, thus leaving the other group stranded, as it were, through lack of potential and willing marriage partners. This issue cannot be resolved definitively with available sources of information, although it would be surprising if there were not a certain symmetry of reasons for both sexes to delay or avoid marriage, particularly regarding those reasons having to do with pressures of urban living, the increasing prevalence of notions of individualism, and a growing acceptability of non-marital relationships. But different imperatives may be operating on different subgroups of males and females. Given the conventions about men being more willing to 'marry down' in terms of social status and education of the prospective spouse, under the circumstances of rising levels of education, educated males are likely to face a wider range of opportunities in the marriage market than either educated females or less educated males. Less educated males face a diminishing pool of less educated women who are likely to be willing to marry them, and this pool will be further depleted by the loss of some of these women to become brides of educated men.

For male city-dwellers (an increasing proportion of all males in this rapidly urbanizing region), a single life-style does not necessarily pose the problems that it once did. For one thing, its increasing prevalence has already removed its aberrant image, which was anyway never as great a problem for males as for females. For another, the practicalities of living can be met by continuing to live with family or, if not, by utilizing fast foods and labour-saving devices. Commercial sex services are readily available, and intimate relationships not legitimized by marriage are increasingly tolerated.

But although there could be many reasons for urban males increasingly to avoid marriage, my contention would be that females have been subject to the sharpest change in motivation to delay or avoid marriage. The revolution in female education and certain trends in the economy have opened up employment opportunities for women in growth areas of the economy including manufacturing sub-sectors such as electronics and textiles, clerical occupations, professions such as teaching and nursing, and some service occupations. As a result, labour force participation

rates for women have risen steadily (Jones 1984: chapter 1; Tsay 1994: table 1). An increasing proportion of women are no longer forced to rely on men financially. And, although there is a risk of romanticizing work that is frequently tedious, repetitive, and more poorly paid than for men doing the same tasks, there is no doubt that many women value not only the financial independence that work brings, but also the workplace contacts that even menial work opens up. The objective change in women's situation in the workforce has no doubt contributed to the ongoing reassessment of women's place in the family, society, and the economy. One element of this change is a desire by women for greater equality in marital relations, which can cause them to raise their expectations in their search for a marriage partner. This can lead to delayed marriage and even to non-marriage if a suitable partner cannot be found (Oppenheimer 1988).

Parents too have benefited from their daughters' new-found capacity to earn an income. In explaining why parents so quickly abandoned the system of arranged marriages at young ages, in cultural settings as widely divergent as Chinese in Hong Kong, Javanese, and Malays in Peninsular Malaysia, the benefits that parents have received from the contributions from their earning daughters have been cited as reasons for their growing reluctance to see their daughters marry (and thereby owe their prime responsibility to someone else) at too early an age (Salaff 1976; Jones 1994: 146–9).

The data presented earlier for Bangkok and Jakarta showed the much higher rates of non-marriage for educated women, and this almost certainly holds in other countries of the region. Education opens opportunities—not only income-earning opportunities, freeing women from their financial reliance on men, but also opportunities in many cases to enter a career that is fulfilling and provides a real alternative to the traditional route to self-fulfilment through marriage and raising a family. For most women, of course, a career and a family are not seen as either/or choices, but rather as roles that can be combined, albeit with some difficulty. As mentioned earlier, though, completion of secondary or higher education by women, as well as giving them career options that may compete with marriage, places them in a category that may well be subject to a real shortage of potential marriage partners. In Bangkok, the asymmetry in proportions of non-married among educated males and females after their early thirties suggests that the marriages contracted by so many of the remaining single men are certainly not with educated women of similar age. What the data cannot tell us, however, is whether these educated women remain single because educated men prefer to marry younger and perhaps less educated women, or because the educated women themselves are reluctant to marry. In Jakarta, the data are harder to interpret. For the tertiary-educated, in 1980 a Bangkok-like rush into marriage by

males after their early thirties appeared to occur, leaving many tertiary-educated women single; but in 1990 male–female differences were less pronounced among the tertiary-educated.

The breakdown of the traditional arranged marriage systems has been more complete for educated than for less educated women. Parents tended to feel that they could not require educated daughters to acquiesce in an arranged marriage (on rural Malaysia, see Strange 1981: 104, 231), and such educated daughters were often too busy pursuing a career to engage in the social life that could be expected to place them in close contact with potential partners. In Singapore, it has been seriously argued that the single-minded concentration on their studies and subsequently on building a career has led to the emergence of a generation of educated young people who lack the social skills necessary for interacting with the opposite sex, let alone for courtship and marriage. Prime Minister Lee Kuan Yew said in 1983 that Singapore might be doomed by a shrinking talent pool because too many educated women were remaining single and childless. This has led to the rather extraordinary perception that the government needs to become a matchmaker for educated men and women. In 1984 a Social Development Unit was established within the Ministry of Finance, the primary objective of which was to bring together single university graduates by organizing tea dances, barbecues, bowling clinics, weekend holiday trips to resorts, computer workshops, and cruises (locally dubbed 'love-boat cruises') (Cheung 1988). Half of Singapore's unmarried graduates are registered with the Social Development Unit, and overall one in three unmarried youths in Singapore are now said to be registered with government matchmakers. In addition, some large private corporations, religious and social groups run their own matchmaking programmes. As one newspaper columnist put it in 1993, 'Match-making has, in fact, become a national pastime'.

These efforts appear to be bearing some fruit. A spokeswoman for the Social Development Unit claimed some of the credit for the fact that 1,643 pairs of college graduates had married in 1991, compared with only 704 in 1984 (Seah 1993). But the extreme reluctance among males to marry a woman more educated than they are, and of educated women to marry a less educated man, poses real problems, particularly as more than half Singapore undergraduates are women. According to a recent report, 'most of the unmarried women graduates in their thirties said they were eager to get married, but cannot find "qualified enough" prospective partners' (Seah 1993).

Another element in some explanations for the decreasing popularity of marriage among high-school and college-educated women is that traditional marriage had little to commend it from a woman's point of view. In Japan, the stereotype of the salaried male employee who leaves early

for the office and returns towards midnight from an evening of business-related carousing, expecting his home-bound wife to raise the children and deal with all the household chores but giving little to her in terms of real intimacy, may have contained enough truth to help explain the reluctance of many young, educated Japanese women to give up the relative freedom of their life as working singles (Tsuya and Choe 1991; Tsuya 1994). Although it is only in recent years that the proportion of women agreeing that 'women had better marry because women's happiness lies in marriage' has fallen off really sharply⁹ and the proportion expressing discontent with the traditional husband-wife division of labour has increased, Tsuya (1994: 116) argues that the findings of a 1988 survey 'indicate that Japanese women are more ambivalent than men about the primacy of marriage, but also more disenchanting with the institution of marriage'. The precipitous drop in marriage rates among young Japanese women over the 1980s, in juxtaposition with the survey findings on attitudinal changes, suggests that 'women were avoiding marriage because they preferred a period of independence before assuming the onerous status of the Japanese wife and mother' (Tsuya and Mason 1995: 156), or possibly were seeking to avoid entering that onerous status at all. Similarly, educated Chinese or Thai women may be growing less tolerant of the lack of intimacy in their marriages and the accepted male patterns of keeping mistresses or visiting the brothels and massage parlours,¹⁰ and they may be using their economic independence to postpone or avoid marriage.

SOME IMPLICATIONS OF THE INCREASE IN NON-MARRIAGE

There is a great deal we do not know about the living patterns of never-married men and women in their thirties and forties. Most basically, we do not know the extent to which non-marriage may be offset by marriage-like living-together arrangements. In Western countries, declining incidence of marriage has been largely but not completely offset by such *de facto* relationships (Bracher and Santow 1989). This appears to be much less the case in East and South-East Asia, but there is very little hard evidence. Among those who are truly celibate, how many continue to live at home with parents? How many live in flats, alone or with friends? How many board? Although we do not know the answers, we do know that the patterns differ from the traditional situation, under which after marriage the young bride and her husband would live for a time with her in-laws (Chinese culture) or with either her in-laws or her own parents (Malay and other South-East Asian culture).

Many issues of life-style, norms of appropriate female behaviour, and role modelling have emerged. Unlike the situation in the 1950s and 1960s,

young women completing their education these days see all around them examples of women who are defying traditional views of women's roles: they are in the workforce, earning money, leading independent lives, remaining single at ages far beyond traditional norms. Their own parents no longer expect to play much of a role, if any, in selection of their marriage partner, or indeed in pushing them towards marriage when they feel they have reached an appropriate age. They also see around them examples of singles life-styles, of women living with male partners without marrying, and of working women who accept the role of mistress or minor wife of a married man. Just how frequent such cases are, however, is unclear.

Traditionally, the period we know as adolescence did not exist in most countries of East and South-East Asia, because young women moved straight from childhood into marriage. The emergence and extension of adolescence is now a major preoccupation of parents, community leaders, and government policy-makers throughout South-East and East Asia. Adolescence brought with it the issues of dating, premarital sexual relations, unwanted pregnancies, abortions, STDs and AIDS, and appropriate policies to deal with all of these (Xenos 1990). There is ample evidence that premarital sexual relations are on the increase (Rindfuss and Morgan 1983; Sly *et al.* 1994), but in countries like Taiwan and the Philippines, on the part of young women at least, engagement in premarital sex was normally a part of the courtship process with the person they ended up marrying, rather than as 'recreational sex' along the lines common in Western countries (Raymundo and Domingo 1986; Chang 1994).¹¹

However, what is being discussed in this paper is a period well beyond that of extended adolescence: a period of mature adulthood, extending even to the end of the reproductive period. Those going through this mature unmarried period in the past decade or two have been pioneers. They have had to grapple with issues of life style without much guidance from role models, in a context of uncertainty about whether they will ultimately marry or not. As the community comes to terms with increased non-marriage, future cohorts will have more 'case history' to guide them.

Governments in the region have had great difficulty coming to terms with changing mores and sexual behaviour of adolescents, and unmarried adolescents have great difficulty in obtaining contraceptive advice and services. Concern about the HIV/AIDS epidemic is putting strong pressure on governments to take a more realistic attitude to the problem. But the evidence presented in this paper is that the issue of contraception for the unmarried is not just an issue about adolescents, but also concerns increasing numbers of women and men in their twenties, thirties, and forties.

In relation to traditional views about women's roles and male-female relationships, the pattern of career-building and non-marriage followed

by a growing minority of women in the region (and particularly prevalent among the better educated) is posing a number of heartaches for traditionalists. In traditional society throughout East and South-East Asia, women's growing financial independence and autonomy in other areas of life have posed major issues of self-image for many men. Job openings in many of the rapidly changing economies of the region seem to be favouring women, so that, in some regions at least, men are left with the feeling that they are being consigned to the dead-end jobs. This is hard to take for brothers, male village acquaintances who have also made the move to the city, and fathers who rely on contributions from working daughters to make ends meet, because traditional views on women's roles die hard (Jones 1994: 146–9). It has been argued that, for Malays in Malaysia, 'the employment status of working daughters has loosened many from father–brother control' (Ong 1987: 107–8). Yet whatever lifestyle these increasingly independent young women have chosen to adopt, on the whole they remain responsible daughters, contributing to family income whether or not they continue to live at home. It is widely recognized throughout the region that daughters are much more reliable contributors to family finances than sons (Ong 1987; Pramualratana 1990: 170–80; Jones 1994: 146–9).

Another major impact of increasing non-marriage has been on fertility levels. It is significant that fertility has fallen to very low levels in the big cities of the region, particularly Bangkok, Singapore, Taipei, Kuala Lumpur (Chinese and Indian population), and Hong Kong, where (except for Taipei) non-marriage rates are the highest. Studies that have disaggregated fertility declines into their component factors have identified falling proportions ever married at any given age as having played a considerable part in the fertility declines in the Republic of Korea, Taiwan, and Peninsular Malaysia between 1960 and 1970, and in Malaysia, Thailand, and Indonesia between 1970 and 1980, although only in Malaysia did the contribution of the marriage component in any way rival that of the marital fertility component (Caldwell *et al.* 1980; Hirschman and Guest 1990). With the increasing prevalence of non-marriage in so many parts of Asia over the 1980s, the contribution of this factor to fertility decline is almost certainly increasing. This is the case in Japan, for example, where standard demographic decomposition of changes in the total fertility rate indicates that in the 1975–90 period (in sharp contrast to the period that preceded it), the overall fertility decline was due solely to decreases in the proportion of women currently married (Tsuya and Mason 1995: 147). Given the pressures contributing to low marital fertility in big cities of the region, the increasing non-marriage rates seem certain to ensure that fertility will remain well below replacement level, and eventually metropolitan populations will be maintained only through in-migration.

Finally, in the context of ageing populations in the region, do the trends in non-marriage have any implications for the future patterns of care for the elderly? As women are normally the caregivers, the answer will depend, among other things, on living arrangements of never-marrying women. If they remain at home with parents, they will be available for caring activities, at least in their non-working hours. But those who live independently, particularly if they pursue a career, may be less able, or less disposed, to make themselves available for the care of ageing parents. Though the specifics of living arrangements will be highly relevant, the key issue in care for the aged is probably the degree of involvement of women in the paid labour force, whether they are married or not. Greater involvement in the labour force reduces availability of time and energy for caring activities; as non-married women have the highest labour force participation rates, this is likely to be a particular issue for them. But whether changes in attitudes towards women's role as caregivers will also accompany the trend towards high levels of permanent non-marriage, and if so how they may affect patterns of care for the elderly, remains to be seen.

CONCLUSIONS

Although this paper has focused on East and South-East Asia, it should be noted that one (and only one) country in South Asia—Sri Lanka—has long had low marriage prevalence,¹² leading Kirk (1971: 130) to term it the 'Ireland of Asia'. The reasons for its low marriage prevalence (see Fernando 1975; Caldwell *et al.* 1989) appear to differ from those influencing recent trends in East and South-East Asia. Nevertheless, for a more complete study of non-marriage in Asia, the Sri Lanka experience clearly needs to be taken into account.

Leete has described the recent trends among the overseas Chinese populations of South-East Asia as a 'major flight from marriage' (Leete 1993: 4). The description can be generalized beyond this particular population group, to include populations such as the Thai, and even the Malays of Brunei, Singapore, and Malaysia. Recent trends appear to foreshadow permanent non-marriage rates of 15 per cent or more among some of these populations. Such rates would not be unique in historical terms. Hajnal (1965) has documented the distinctive European marriage pattern, dating back at least to the seventeenth century, whereby in many countries around 1900, 15–20 per cent of women remained single at age 45–49. In Scotland during the late nineteenth and first half of the twentieth century some 20 per cent of women aged 45–49 remained never-married, and in Ireland in the late 1930s almost 30 per cent of such

women remained never-married (Watkins 1984: fig. 1; United Nations 1990: tables 1 and 2; Anderson and Morse 1993). But after the Second World War, there was a major recovery in marriage in Europe, and rates of non-marriage declined sharply. The difference between the flight from marriage in parts of Asia and the European situation in the first decades of the twentieth century is that in Asia it is occurring at a time of economic prosperity, whereas in Europe the popularity of marriage traditionally increased at such times (Leete 1996: 174).

Marriage still remains close to universal in large populations of East and South-East Asia, including the Republic of Korea, Indonesia, and China, despite all the pressures towards later marriage in China.¹³ Continuing low levels of non-marriage in Korea are a puzzle, given its spectacular economic growth and high levels of education, which in most countries of the region appear to have been related to increasing levels of non-marriage. In other countries, including Myanmar and Cambodia, there is little evidence. Therefore, it would be premature to imply that the 'flight from marriage' is sweeping the entire region. Even in countries such as Indonesia, though, levels of never-marriage are distinctly higher in cities and among the better-educated, the groups whose share of the total population is rapidly increasing. Rising levels of non-marriage can be expected on these grounds alone.

At the other end of the scale, rates of non-marriage in some of the large cities of the region are among the highest in the world, and are almost certain to rise further as a result of compositional changes in the population, which will lead to an increasing concentration of women at educational levels and in occupational sectors where the proportions never-married have traditionally been high. The intriguing question is whether these high rates of non-marriage are likely to be long-term (even permanent), and if so whether they will be modified in practice by increasing rates of consensual partnering. The evidence to hand does not provide a definite answer to either of these questions. What does appear to be clear is that increasing numbers of women in the region are questioning whether the kinds of marriages to which they can aspire really have much to offer them, and are staying away from marriage in droves.

NOTES

1. Smith and others refer to permanent non-marriage (usually approximated by the proportion never-married at the end of the childbearing period—ages 45–49) as celibacy. Though it has the advantage of brevity, as well as dictionary accuracy, I would prefer to avoid use of this term, because of the image

it conjures up in popular usage: abstention from sexual activity. This image may or may not be correct in the case of permanent non-marriers.

2. The UN study noted that, with few exceptions, marriage prevalence by age 50 exceeds 95% among men and 96% among women. The exceptions it notes are Hong Kong and the Philippines for women, and Iraq, Singapore, and Sri Lanka for men.
3. This close relationship can be inferred from Coale's discovery that there are precisely defined age patterns of nuptiality (Coale 1971, 1977). Coale did not apply his analysis to the issue in question, because he was interested in determining regularities in nuptiality patterns across populations differing in certain characteristics, including their proportions ultimately marrying, but not in studying how those patterns changed when a given population underwent large changes in the proportion ultimately marrying. But the relationship can easily be studied empirically. For example, in Thailand the ratio between the proportion single among females aged 45–49 and the proportion single in the same cohort ten years earlier averaged 0.75 in 1970 and 1980. If this ratio continued to hold in future, then the proportion single among women aged 35–39 in 1990 would result in higher proportions single for this cohort 10 years later than had been the case for cohorts reaching age 45–49 in 1980 and 1990. Calculations for the other countries yield similar results.
4. It is tempting to analyse cohort trends in this table, but this requires great caution, because, in the context of high rates of migration, the group of women aged, say, 40–44 in 1990 includes a great number who, when aged 30–34 in 1980, were not living in the city; and conversely, many who were included in the 30–34 age group in 1980 have since moved elsewhere. Even the comparison of time trends in percentages non-married for particular age groups involves uncertainties in interpretation because the proportions of migrants in a given age group in different years is likely to differ.
5. Although they are countries, Singapore and Hong Kong are included in the 'city' section of this figure, and in Table 3.2 rather than Table 3.1, because they are city-states.
6. There has actually been a *decrease* over time in proportions never-married among the more highly educated group, particularly for women aged 40–44. This is not easy to interpret. It could mean changes over time in actual marriage prospects, but it could also have to do with the smallness of this group in earlier years, and its more homogeneous social background compared with the expanded group of better-educated women in recent years.
7. In the early 1900s, the proportion of never-married among men aged 45–49 was over 10% in the UK, Italy, the Netherlands, Switzerland, and the USA. It was even higher in Australia, where migration flows had led to unbalanced sex ratios in the late 1800s, the time these men could have been expected to marry (UN 1990: table 1; Borrie 1994: 168).
8. This point was made by the head of the Women's Advisory Group on the Integration of Women in Development, Datuk Hajah Zakiah Hanum (Jones 1994: 152).
9. This proportion, based on a series of national opinion surveys, declined from 40% in 1972 to 32% in 1979, 28% in 1987, and 14% in 1990 (Tsuya and Choe 1991: table 15).

10. For a discussion of attitudes towards male sexual behaviour in Thailand, see Havanon *et al.* (1993), and VanLandingham *et al.* (1995). Two recent studies in Thailand, one in Bangkok and the other in rural areas, indicate that women are less satisfied with their marriages than men, and are more likely to have thought of divorce (Limanonda 1991; Edwards *et al.* 1992).
11. But there are also claims that in countries such as Thailand promiscuity is getting out of hand among young people—see *Far Eastern Economic Review* (11 May 1995: 53); Havanon *et al.* (1993); Jones (1995).
12. The 1901 Census showed percentages never married at ages 45–49 in excess of 10% for both males and females. Although it appears that these percentages were exaggerated (Fernando 1975), marriage prevalence does indeed appear to have been relatively low throughout the 20th c. (Caldwell *et al.* 1989).
13. China had a distinctive pattern of rising female ages at marriage in the 1970s, followed by declines in the early 1980s. The relative contribution of population policies and economic and social changes to these trends is a matter of debate (Guo Yang 1996). Analysis of non-marriage along the lines of that conducted in this study is greatly needed for China.

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An Analysis of Parity-Dependent Fertility Falls in Tropical Africa

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The tracing of fertility trends by traditional measures in the early stages of a demographic transition is speculative and uncertain even if the data are of good quality. Alterations in exposure to risk through fluctuations in the intensity and patterns of mating are hard to allow for with sufficient accuracy. When the data are subject to significant reporting errors (even when quite modest), as in most Third World countries, the difficulties are exaggerated greatly. It is no surprise then that there is a history of controversy about the nature and indeed existence of fertility falls in many countries. Mexico and Brazil in the 1970s, Pakistan in the 1980s, and Nigeria and Senegal currently are notable examples.

Much of the confusion and uncertainty can be avoided by analyses using parity progression ratios. These are the proportions of women who proceed from a birth of order n to the next of order $n + 1$ over their lifetime (Brass 1989). The simplest and most intuitively obvious measures are for cohorts of women born in the same years or initiating family building in the same years, but synthetic time-period analogues have also been defined. The present paper will use only birth cohorts.

Parity progression ratios for a cohort of women are simply a reorganization of the distribution of completed family sizes at the end of the reproductive period. Unlike the traditional total fertility rates, these indices are not affected by the timing of births in the family build-up and hence by the transient effects of alterations in mating patterns. The parity progressions provide robust evidence on the trends in family size which are basic to long-term developments in fertility. Of course, the estimation of precise measures is dependent on accurate reporting of total births but not on their location in time; errors in the latter are particularly frequent in Third World surveys.

Series of parity progression ratios for cohorts have been exploited effectively to trace fertility trends (see Feeney 1988). Two limitations are apparent, both of which are a consequence of the need for family completion before the measures can be calculated. In the Third World, birth registration or notification is virtually nowhere good enough as a basis for the analyses. Reliance must be put on censuses and surveys where

total births to women are recorded. Unfortunately, it has been relatively rare for such histories to be collected for women over 50 years of age. The series of cohorts for which measures can be calculated are, therefore, very short. They are also dominated by the fertility of some time in the past since the impact of recent trends on the completed family sizes is relatively small.

The approach has been extended to cohorts of incomplete fertility by the calculation of surrogate measures of parity progressions. By standard life table methods, the probabilities of movement from the n th to the $(n + 1)$ th birth in time intervals can be computed, and hence the proportions of women attaining the subsequent birth within different periods, provided that there are adequate observations. Empirical study suggests that a convenient summary index is B_{60} , the proportion of women moving on to the next birth within 60 months. This is normally only a small percentage less than the corresponding parity progression ratio and can be derived satisfactorily up to moderate birth orders and down to middle reproductive age cohorts (25–34 years) with the sample sizes common in birth history surveys.

There is a significant problem. The values for the younger cohorts are appreciably biased because the women who have attained any birth order are overweighted by the faster breeders with a higher B_{60} . A simple way of adjusting for this was developed by Brass and Juarez (1983). The B_{60} s are calculated additionally for age cohorts of women at five years before the survey by truncating the birth histories to that time. There is then a series of comparisons of pairs of cohorts equally incomplete. The trends are derived by aggregating the pairs of comparisons.

The procedure is illustrated in Table 4.1, which shows the calculations for the Kenya birth histories from the Demographic and Health Survey of 1993. The method has been quite widely applied, to Latin American populations by Juarez (1983, 1987) and to African countries in the investigations of the United States National Research Council's Committee on Population. The Working Group on Kenya of the Panel on the Population Dynamics of sub-Saharan Africa of the latter presented trends derived from Demographic and Health Surveys for several countries (Brass and Jolly 1993). However, since these were primarily in the context of the population dynamics of Kenya, the evidence is presented very briefly. In fact, the exposition of the characteristics of the technique in published papers is relatively sketchy. A recent study of fertility trends in Pakistan by Juarez and Sathar (forthcoming) raised issues about the robustness of the method to particular errors in the data. These are highly relevant to African applications and are, therefore, examined in an Appendix. It is shown there that the technique is satisfactorily robust to the time location errors and instabilities which are a feature of African data. The analyses that follow are then established on a firmer base.

TABLE 4.1 Proportions of Women Progressing to the Next Birth within Five Years, Truncation Approach: Kenya, 1993

Age cohort	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10
<i>(a) B₆₀ for women with n births who go on to the (n + 1)th birth, for two consecutive five-year age cohorts that are equally truncated</i>									
15-19	0.9072								
20-24t	0.8395								
20-24	0.8175	0.8348							
25-29t	0.9042	0.8936							
25-29	0.8942	0.8513	0.8573	0.8507	0.8227	0.8418			
30-34t	0.9015	0.9191	0.9095	0.9024	0.8982	0.7782			
30-34	0.8829	0.8928	0.8597	0.8533	0.8301	0.7543	0.7646	0.9171	
35-39t	0.9338	0.9218	0.9174	0.8922	0.9068	0.8477	0.9021	0.9231	0.5937
35-39	0.9298	0.9192	0.9088	0.8472	0.8307	0.7657	0.8066	0.7576	0.6939
40-44t	0.8957	0.9032	0.9261	0.8713	0.8891	0.8825	0.8724	0.8028	0.7297
40-44	0.8947	0.8929	0.9128	0.8547	0.8486	0.8307	0.7896	0.7309	0.6378
45-49t	0.9228	0.9150	0.9280	0.8846	0.8920	0.8757	0.8562	0.7939	0.7380
45-49	0.9228	0.9061	0.9274	0.8751	0.8875	0.8538	0.8409	0.7436	0.6865
<i>(b) Indices of relative change, using raw data</i>									
15-19/20-24t	1.0806								
20-24/25-29t	0.9041	0.9342							
25-29/30-34t	0.9919	0.9262	0.9426	0.9427	0.9159	1.0817			
30-34/35-39t	0.9455	0.9685	0.9371	0.9564	0.9154	0.8898	0.8476	0.9935	
35-39/40-44t	1.0381	1.0177	0.9813	0.9723	0.9343	0.8676	0.9246	0.9437	0.9509
40-44/45-49t	0.9695	0.9758	0.9836	0.9662	0.9513	0.9486	0.9222	0.9206	0.8642
<i>(c) B₆₀ adjusted using indices of relative change</i>									
15-19	0.8510								
20-24	0.7875	0.7542							
25-29	0.8710	0.8073	0.7907	0.7412	0.6614				
30-34	0.8781	0.8716	0.8389	0.7863	0.7221	0.6253	0.6077		
35-39	0.9288	0.8999	0.8952	0.8221	0.7889	0.7027	0.7170	0.6460	0.5642
40-44	0.8947	0.8842	0.9122	0.8455	0.8443	0.8099	0.7755	0.6846	0.5933
45-49	0.9228	0.9061	0.9274	0.8751	0.8875	0.8538	0.8409	0.7436	0.6865

The trends that are the central issue of the investigation are best presented in terms of movements from an initial base. Since the concern is with the beginnings of the transition to lower fertility levels, it would be ideal if the base preceded the changes. Again, however, this is impracticable for most populations because of the restricted range of the age cohorts for which birth histories are available. It seems necessary to measure trends from the B_{60} values for the oldest available cohort, normally that of the women aged 45–49 at the time of the survey.

Table 4.2(a) shows the B_{60} values for Kenya in 1993 at each parity progression relative to 1,000 for women aged 45–49. The measures exhibit a clear fall for each parity progression as the age groups become younger, although individual values are erratic. It has to be noted that fluctuations arising from sample errors may be appreciable and that there may also be systematic effects from biases in the reporting of ages and indeed from omissions of births. Assessments of the trends must take account of these possibilities and should not place too much weight on particular measures. Inspection of the Kenya array suggests that the reductions in the progressions are greater at the higher birth orders. This does not, however, necessarily mean that family restriction is more severe at high orders because the measures are for different time periods. Thus, the progressions from one to two and two to three births for women in their late thirties and early forties at the time of the survey obviously took place many years before the progressions at higher orders, for example from six to seven births upwards, for the same age cohorts. Indeed, the progressions from one to two and two to three in the youngest age groups are comparable in trends to the higher progressions for the older age groups. The differences in the strengths of trends may therefore be due to acceleration over time rather than the effects of family size.

It is useful then to examine the trends by time periods as well as by cohorts. A simple, approximate, but reasonably accurate representation is provided by organizing the measures by diagonals of the age cohort tables. In all the populations exhibited, the mean birth intervals are close to two and a half years. Thus, the orders move two births back in time for each five years of the age cohorts. For example, the progression from one to two births for the cohort aged 20–24 at the survey is located roughly at five years after the corresponding transition for the 25–29 year age group and ten years after that for the 30–34 year age group. Moves in time of two and a half years can be allowed for by averaging the B_{60} s in two successive age groups. Table 4.2(b), for the Kenya Demographic and Health Survey 1993, shows the trends in the B_{60} s rearranged by time period. The origin is arbitrary but the zero has been taken at the most recent age cohort for which measures can be calculated. On a time perspective it is no longer appropriate to measure the changes from the values of the 45–49 year age cohort. Rather, the base should be a time

TABLE 4.2 Trends in Parity Progressions: Kenya, 1993
(a) By cohorts^a

Cohort	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10
20-24	853	832							
25-29	944	891	853	847	745				
30-34	952	962	905	899	814	732	723	863	
35-39	1007	993	965	939	889	823	853	869	822
40-44	970	976	984	966	951	949	922	921	864
45-49	1000	1000	1000	1000	1000	1000	1000	1000	1000

^a Age group 45-49 = 1000.

(b) By time periods

Birth order	No. of years preceding survey										
	0	5	10	15	20	25					
1-2	858	901	944	948	952	980	1007	988	970	985	1000
2-3	862	891	927	962	978	993	984	976	988	1000	
3-4	853	879	905	935	965	975	984	992	1000		
4-5	873	899	919	939	952	966	983	1000			
5-6	814	851	889	920	951	975	1000				
6-7	778	823	886	949	974	1000					
7-8	853	888	922	961	1000						
8-9	895	921	960	1000							
9-10	864	932	1000								

(c) Proportional reductions in parity progressions over ten years

Birth order	No. of years preceding survey		
	0	5	10
1-2	901	946	992
2-3	881	911	948
3-4	884	911	938
4-5	917	944	965
5-6	856	895	935
6-7	799	845	910
7-8	853	888	922

point. Since the time spans are different over the progressions, equivalent periods for comparison can be constructed only by omitting the longer intervals for the lower parities. A reasonable compromise is to concentrate on the trends over ten years for the progressions up to the seventh to eighth births. The measures thus derived for Kenya in 1993 are presented in Table 4.2(c).

TABLE 4.3 Proportional Reductions in Parity Progressions over Ten Years from 1000: Kenya

Survey	Birth orders						
	1-2	2-3	3-4	4-5	5-6	6-7	7-8
1989: 10-0 yrs	981	954	926	979	939	933	914
1993: 15-5 yrs	937	942	920	935	889		
10-0 yrs	901	881	884	917	856	799	853

Panels (a) and (c) of Table 4.2 illustrate alternative interpretations of the trends in parity progressions: that they are mainly cohort-linked, or that they are time-period-linked. Although a case can be made for either conclusion, the second seems the more convincing. The values in panel (b) of the table indicate that trends in the parity progressions at more than ten years before the survey are small. Subsequently reductions at much the same pace occur for all progressions. The configuration is consistent with a time-period-driven effect operating over all age cohorts. The alternative from panel (a) is of trends spreading over cohorts beginning at the higher parities and not reaching the younger age groups until shortly before the survey. On this interpretation, the consistency of the time-period trends is an artefact of the combination of variations over cohorts and over birth orders. It would also be expected that reductions in the higher-parity progressions would be established earlier in time, and there is no sign of that in the B_{60} trends calculated from the 1989 Demographic and Health Survey.

The existence of similar birth history surveys in Kenya in 1989 and 1993 enables comparisons to be made which act as a check on the qualities of the data and the validity of the methods. Because of fluctuations in the estimated indices resulting from sample errors, it is not productive to examine individual measures in detail. However, there should be agreement on the broad trends, exhibited by the parity progression measures. Table 4.3 shows the proportional falls in the B_{60} s of different orders over time periods for the 1989 and 1993 birth surveys. The measures for 1989 are for the interval 10 years to 0 years before; for 1993 they represent 15 years to 5 years and 10 years to 0 years previously. The average time period between the interviews in the two surveys was about four years and two months, and there is not therefore an exact correspondence between the 10 years to 0 of the earlier and 15 years to 5 of the later. However, the rough agreement is adequate for the present purpose. When allowance is made for fluctuations in the individual measures, the consistency of the trends from 1993 and 1989 is acceptable. The reductions in the progressions over the preceding ten years are substantially greater for the 1993 than the 1989 surveys, demonstrating the acceleration of the downward trends.

TABLE 4.4 Decline in Parity Progressions over Ten Years from 1000: Tropical Africa

Survey	Birth orders						
	1-2	2-3	3-4	4-5	5-6	6-7	7-8
Kenya 1989	981	954	926	979	939	933	914
Zimbabwe 1988-9	952	950	910	873	920	952	883
Botswana 1988	743	760	753	813	872	891	922
Togo 1988	932	979	929	1001	886	1002	1111
Nigeria 1990	945	905	983	925	940	921	1009
Liberia 1986	989	969	1024	957	914	984	876
Ghana 1988	988	1022	971	1023	1017	947	981
Uganda 1988-9	985	971	1042	966	1022	997	938
Senegal 1986	940	974	976	932	992	927	949
Average	939	943	946	941	945	950	954

B_{60} parity progressions have been calculated for all the countries of tropical Africa included in the Demographic and Health Surveys Stage I and also for Nigeria of Stage II. The survey dates range from 1986 for Liberia and Senegal to 1990 for Nigeria. In two of these populations, Burundi and Mali, there is little indication of a fall in the progressions and individual measures are particularly erratic; these populations are excluded from the examination that follows. For all the others, there are some indications of downwards trends but they are generally slight and far from convincing. If the erratic features are due to the sample and bias errors, improved clarity may come from an aggregation of the results.

In Table 4.4 the B_{60} progressions at the most recent time are shown as a proportion of the level ten years before for nine countries of tropical Africa. The proportions are averaged over the surveys. These averages are impressively regular and consistent. They vary remarkably little from a fertility decrease of 5-6 per cent for each progression over the ten years. There are, of course, discrepancies for particular countries. The downwards trend for Botswana is notably higher, and those for Ghana and Togo are very marginal. It is not possible to be confident that these differences reflect real trend effects rather than limitations of the analyses. It seems fair to conclude, however, that in a majority of tropical African countries the initiation of a downward trend in parity progression began in the 1980s.

The trends are expressed as changes by age cohorts in Table 4.5. Since these are simply rearrangements of the same measurements, the reductions are, of course, maintained. However, the pattern by birth orders is altered, with now small percentage declines at low parities, 1-2 and 2-3, increasing to some 9 per cent at 5-6 and over. As pointed out in the

TABLE 4.5 Decline in Parity Progressions over Cohorts to Age 30–34 years from 1000 at 45–49 years: Tropical Africa

Survey	Birth orders						
	1–2	2–3	3–4	4–5	5–6	6–7	7–8
Kenya 1989	954	994	954	948	992	848	983
Zimbabwe 1988–9	963	926	930	906	884	969	838
Botswana 1988	1017	922	836	869	833	957	569
Togo 1988	957	982	934	952	841	904	955
Nigeria 1990	994	947	951	903	889	891	943
Liberia 1986	933	965	899	956	844	946	1098
Ghana 1988	977	962	926	944	975	926	889
Uganda 1988–9	970	940	990	976	979	1002	1074
Senegal 1986	1017	1027	1012	956	974	887	923
Average	976	963	937	934	912	926	919

TABLE 4.6 Decline in Parity Progressions over Ten Years from 1000: Asia and Latin America

Survey	Birth orders						
	1–2	2–3	3–4	4–5	5–6	6–7	7–8
Korea 1974	995	978	849	825	772	759	902
Sri Lanka 1975	993	945	916	872	794	980	858
Pakistan 1975	967	905	886	857	884	809	785
Mexico 1976–7	995	972	938	941	970	962	953
Colombia 1976	949	876	869	916	874	864	867
Costa Rica 1976	879	812	820	868	815	898	962
Peru 1977–8	1042	950	965	978	972	1030	1008
Panama 1975–6	983	931	895	855	985	852	894
Dominica 1975	980	944	901	958	959	970	1015
Average	976	924	893	897	892	903	916

discussion of Kenya, this may be due to effects linked to cohorts but be larger for higher birth orders; the pattern is more consistent, however, with the time-period representations of Table 4.4.

Similar calculations were made earlier for countries of Latin America and Asia from surveys carried out in the World Fertility Survey programme of the 1970s. These are convenient for comparison with the African results, since the fertility transition in Latin America and Asia began in the 1960s and 1970s in many countries, i.e. about fifteen to twenty years before the dates of the surveys. Table 4.6 shows the ten-year time-period reductions in the B_{60} progression ratios for nine populations. As for tropical Africa, the individual measures are erratic, but

averages over the nine countries are fairly regular. The downward trends in the parity progressions over time in the late 1960s and early 1970s are clearly demonstrated. The variations by birth order are, however, notably different. Instead of the African downward movements of the same size for each progression, the reduction is about 10 per cent for the middle birth orders 3-4, 4-5, and 5-6, but slightly less at neighbouring higher and lower progressions. The decline at the 1-2 progressions is even smaller at 2.5 per cent. If the measures are organized by cohorts, the general pattern of variations by birth order does not change but is exaggerated. The deviations between patterns in Africa and Asia/Latin America can then be assessed in the same terms, although the quantitative values are altered.

The most important conclusion from the analysis is that a transition to regimes of lower fertility through family limitation became widespread over Africa south of the Sahara in the 1980s. The Demographic and Health Surveys, which were repeated in Kenya in 1993 and Zimbabwe in 1994, show that, in these two countries at least, the fertility declines have continued. The determinants of the falls have yet to be rigorously examined in most of the populations. An exception is Kenya, where the correlation between fertility reductions and increased use of contraception, overall and for sub-aggregates of the population, is remarkably close.

The distinctive differences between the patterns of decline by birth order for Africa and for Asia/Latin America require substantial investigation to establish explanations and implications. It seems likely that the essential divergence lies in the nature of marriage in the regions of the world. In Asia and Latin America marriage is a well defined event marking the initiation of the family build-up. B_{60} progressions from mating to first birth can be calculated with little difficulty for most populations, although their interpretation in Asia is complicated by the gap (which is disappearing) between formal marriage and cohabitation. In Africa, marriage is a process with stages. The point at which the process becomes an entry into family build-up analogous to practices in the rest of the world is not well defined. B_{60} calculations from mating to first birth are not practicable from Demographic and Health Survey maternal histories because of the uncertainties of the starting point. The progression from the first to the second birth in African populations is then not so clearly the gateway to a stable family.

Attention has been drawn to divergences between African and Asian/Latin American patterns of falls in fertility in previous publications. The study of Kenya (Brass and Jolly 1993) by the Panel on the Population Dynamics of sub-Saharan Africa, National Academy of Sciences, emphasized the similarity of the fertility trends from the mid-1970s in subgroups of the population, classified by age and birth order of mother, and also her educational level and type of residence (urban or rural). The increase

in the use of contraception was closely consistent with the fertility falls. Caldwell *et al.* (1992) forecast that the African fertility decline will present a new type of demographic transition where there is a similarity of contraceptive use and fertility fall at all ages. They analyse birth histories from a survey in Ado-Ekiti, Nigeria, as an illustration of the determinants operating. The major demand for contraception was for delaying the onset of childbearing and marriage and for maintaining the length of birth intervals as lactation, amenorrhoea, and postpartum abstinence decrease. The authors argue that young adults' attempts to avoid pregnancy and marriage in the interests of education and careers, together with the traditions of maintaining lengthy birth spacing, will dominate the patterns of fertility transition in Africa. The analysis described here is consistent with that claim, although the quantitative evidence is limited.

METHODOLOGICAL APPENDIX

Several features bearing on the robustness of the adjusted B_{60} calculations were discussed in previous publications. Thus, in the Ph.D. thesis of Juarez (1983), the distributions of intervals to the succeeding birth for different orders are computed. These demonstrate that there is little scope for bias from divergences between the B_{60} s and the complete parity progression ratios. The former are only some 10 per cent smaller than the latter as a consequence of the births which occur at more than five years from the one preceding. The additional births are widely spread over the remainder of the reproductive period. Variations in the interval distributions have then only a small effect on the proportion of the total movement to the succeeding birth which occurs within the five years. It is possible to imagine conditions in which this would not be the case, but it is likely that such extreme effects would be detected. The conclusion that trends in the adjusted B_{60} s will generally follow closely those of the parity progression ratios seems justified.

The application of the technique to the birth histories recorded in the Pakistan Demographic and Health Survey of 1990–1 (Juarez and Sathar, forthcoming) revealed another potential source of bias. It is clear from the comparative analysis of these histories in relation to other data sources that the time location of the births is seriously distorted. Too few births were reported in the five years before the survey (in the order of 25 per cent deficit) and too many in previous periods. As a consequence, the truncation procedure for the adjustment of the B_{60} s is suspect. An incorrect division of the births to allow for the faster pace of arrival at an order by the quicker breeders has been applied. The simplest way to examine the implications of this is by calculating the effects of varying the truncation interval.

Table 4.A1 shows the adjusted B_{60} s for Pakistan in 1990–1 for women 25–29 years old (with the adjustments cumulated from the 45–49 year cohort). The

TABLE 4.A1 Birth Progressions Adjusted for Bias: Pakistan, 1990–1991

Truncation (years)	Birth orders						
	1–2	2–3	3–4	4–5	5–6	6–7	7–8
<i>Women aged 30–34</i>							
0	0.9468	0.8974	0.8712	0.8685	0.7954	0.7088	0.5517
4	0.9305	0.8515	0.7989	0.7466	0.6253	0.4523	0.4405
5	0.9280	0.8893	0.8370	0.7299	0.6951	0.5618	0.4561
6	0.9230	0.8850	0.8413	0.7066	0.6870	0.5504	0.4406
<i>Women aged 45–49</i>							
	0.9212	0.9128	0.8706	0.8650	0.7853	0.7429	0.7776

truncation intervals have been varied from zero (no adjustment) through four, five, and six years. The indices for the 25–29 year age group are also compared with the values for the base 45–49 years. The measures for the five-year truncation are the standard calculations, but, as noted above, the time location of birth errors in the Pakistan survey imply that the six-year truncation gives a more accurate comparison of successive cohorts with equal weighting of faster and slower breeders. The reduction in the B_{60} s between the 45–49 and 25–29 age groups is substantially greater for the adjusted than the unadjusted (zero truncation) indices. (This, of course, is why adjustment is necessary to remove the distribution bias.) However, the five-year truncation measures are very close to their six-year analogues which are taken to be the more precisely corrected for the pace biases. The four-year truncation adjustments are also in fair agreement, although there are some erratic features presumably because of the chance fluctuations from small numbers. Similar experiments in varying the truncation interval have been carried out on several sets of birth histories from WFS and DHS surveys for other populations. The results confirm that the use of an inappropriate truncation interval has only a small effect on the calculated measures within the bounds that may plausibly occur in practice. The standard technique is then robust to errors in the time location of births reported in the survey histories.

It can be deduced from this that the estimated B_{60} trends are also insensitive to changes in the birth-interval distributions from cohort to cohort that are real and not due to reporting errors. Real changes can, of course, occur independently of parity progression movements because of alterations in breastfeeding, separation of partners between births, and, probably most commonly, variations in ages at mating. A more direct examination of such effects is provided by the comparison of the B_{60} trends with the P_n trends. Brass and Juarez (1983) suggested that an even simpler technique for the estimation of the parity progression movements was to calculate the P_n measures, i.e. the proportion of women in an age cohort proceeding from the n th to the $(n + 1)$ th birth in the incomplete histories. The truncation adjustment is then applied in the same way as for the B_{60} s and the pairwise comparisons combined over the age groups as before. In a number of applications to different populations, the adjusted B_{60} and adjusted P_n values gave very similar trends, although the measures from the latter tended to be more erratic. The control over the length of exposure applied in the life table

computations of the B_{60} s is not present for the incomplete P_n s, which are subject to the effects of birth interval changes more directly.

A search was made for populations in which trends in parity progression ratios had been absent or small but birth intervals had altered. Very few data sets met these criteria. Not surprisingly, stability in birth intervals and in parity progression tended to be associated. However, a number of examples from recent African surveys were found. Table 4.A2 compares the B_{60} and P_n trends for five populations. In Burundi and Mali there is no suggestion of a downwards trend in the B_{60} s. In Ghana and Senegal there are signs of small falls but they are not consistent for the different birth orders. Overall, the evidence is far from impressive. There are also doubts about Togo, although appreciable downwards trends appear to be present at progressions 1–2, 3–4, 5–6, and 6–7. In all of these populations the P_n measures indicate larger falls than the B_{60} values. Thus, in Burundi appreciable reductions appear except for the 3–4 progression and to a lesser degree for 5–6. In Mali only the 6–7 progression is greater for the B_{60} . Ghana, Senegal, and Togo present downward trends of appreciable size at most birth orders, although there are a few moderate exceptions. It is reasonable to conclude that the B_{60} calculations are robust to the birth-interval distribution movements which affect the P_n s. The latter can give acceptable evidence of trends but are subject to biases and fluctuations which do not distort the former.

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Replacement-Level Fertility: *The Implausible Endpoint of the Demographic Transition*

PAUL DEMENY

During much of the period following the Second World War, attention to issues related to fertility change—scientific, programmatic, and popular—has been centred on the transition from high to low fertility. The reasons for this are well known and need no elaboration here. The concept of ‘low fertility’, however, is elusive, and a facile assumption that the notion is correctly understood by all who use it can lead to a neglect of an important aspect of contemporary and prospective demographic change.

Much of John Caldwell’s oeuvre, too, is devoted to analysing population questions in the high-fertility developing world; yet it also manifests his unwillingness to see those questions as detached from the need for understanding demographic change as an overarching process, with respect to both time and geographic space. Chapter 8 of Caldwell’s *Theory of Fertility Decline*—by all account his most influential book—is titled, with characteristic ambition, ‘An explanation of the continued fertility decline in the West: stages, succession, and crisis’. Questions relating to the late stages of the demographic transition, he notes, trouble its theorists. Indeed, he says, ‘in recent years post-transition fertility theory has seemed to be in greater difficulties than pre-transition theory’ (Caldwell 1982: 233). His discussion of these difficulties concludes with the following comments:

In the long social and demographic transition every generation has felt that a lengthy period of transition has been completed, that social change could go no further, and usually, that fertility could not fall much further. Classical demographic transition theory assumed that replacement level was the end product of the transition. . . . Yet there is nothing in [my] analysis to suggest any reason why there should be such a floor to fertility decline.

. . . My best guess . . . is for declining population in all [Western] countries by the early twenty-first century . . . and in the world as a whole—a much more industrialized world—by the end of that century. (Caldwell 1982: 264, 266)

While the above characterization of the formulations of classical theory may be a little cavalier—it applies more to the popular perception of the

theory than to its substance—Caldwell's proposition about the nature of the end product of the transition is certainly well taken and important. Yet neither policy-makers nor the informed public seem to grasp the point that there is no magic force that guarantees stability of fertility behaviour once replacement level is reached. The received wisdom on the course of fertility envisages progress—spontaneous or socially engineered—towards replacement level, followed by stasis, at a total fertility rate (TFR) of, roughly, 2.1. That, in turn, would lead to population stabilization, albeit with a time lag generated by the momentum imparted by an age distribution that temporarily favours continued population growth. Once the momentum is spent, the age of zero population growth would beckon.

Thus, not surprisingly, there is no mention of below-replacement fertility in, for example, that compendium of contemporary population concerns (as seen by population-specialized branches of governments, international organizations, and like-minded non-governmental organizations), the Cairo Programme of Action. Indeed, the word 'replacement' does not occur in the Programme, a document of more than 40,000 words. There are, instead, a few references to population stabilization. The Programme declares that 'attainment of population stabilization during the twenty-first century will require the implementation of all [its] policies and recommendations' (UN 1994b: 6.1). But those policies and recommendations are geared to result in a reduction of fertility, rather than in its sustenance once fertility is reduced. Sustenance is taken for granted: the choices are between future stationary populations but at possibly greatly differing absolute size: say, between an ultimate global level of 8 and 12 billion, or between 11 and 15 billion, or between some such pairs of contrasting magnitudes.

But as Caldwell warns us, things are more complicated. My purpose here is briefly to examine some aspects of the issue outlined in the Caldwellian reminder cited above. The paper is organized in four sections. First, I present some basic data on recent fertility behaviour in populations that now have low fertility. Second, I comment on current population forecasts—demographic constructs that underlie and reinforce popular notions about the end of demographic transition as a stationary population. Next, I contrast the assumptions incorporated in these constructs with views derived from population theory. Finally, I consider some of the policy implications of the alternative perspectives on post-transition fertility trends.

RECENT FERTILITY BEHAVIOUR

Since the mid-1960s levels of fertility, measured country-by-country, have fallen dramatically for much of the world's population. All of the countries that can be classified today as having low fertility—using a TFR of 2.1

TABLE 5.1 Total fertility rates in selected European countries, 1964 and 1992

	1964	1992	Change (%)	Below replacement level ^a since [year]
<i>North</i>				
Denmark	2.60	1.76	-32	1969
England and Wales	2.94	1.79	-39	1973
Ireland	4.07	2.06	-49	1992
Norway	2.98	1.88	-37	1975
Sweden	2.48	2.09	-16	1968 ^b
<i>West</i>				
Belgium	2.72	1.66	-39	1972
France	2.91	1.73	-41	1975
Germany	2.53	1.30	-49	1970
Luxembourg		1.64	-30	1969
Netherlands		1.59	-50	1973
<i>South</i>				
Greece	2.31	1.39	-40	1981
Italy	2.70	1.27	-53	1977
Portugal	3.21	1.51	-53	1982
Spain	3.01	1.27	-58	1981

^a Replacement level is defined as TFR = 2.1.

^b 2.13 in 1990; 2.11 in 1991.

Source: Sardon (1994).

or lower as the defining criterion—registered considerably higher values of that index as recently as 30 years ago. (A TFR of 2.1 is a reasonably close approximation of replacement-level fertility for a population of low mortality: one in which the probability of survival from birth to the reproductive ages is nearly 1.0.) Table 5.1 compares TFRs for 1964 and 1992 for fourteen countries of northern, western, and southern Europe. None of these countries was close to replacement level in 1964; by 1992, with the exception of Sweden and Ireland, all had TFRs below 2.1 by a substantial margin. Spain, Italy, and Germany had the extraordinarily low rates of 1.3 or lower; the corresponding figures for Greece and Portugal were 1.4 and 1.5, respectively. The percentage drops between 1964 and 1992 in four of the countries shown in the table were 50 per cent or greater, in four others the drops ranged between 40 and 49 per cent, and in five countries between 30 and 39 per cent. Only in Sweden was the decline relatively modest, 16 per cent: a figure reflecting the remarkable and thus far unique recovery of the Swedish TFR from its postwar low of 1.6, registered in 1978.

The choice of 1964 as the reference in a simple comparison such as offered in Table 5.1 imposes itself because of the remarkable synchrony of postwar fertility trends in this group of countries. Of the fourteen

shown in the table, ten had their peak postwar TFRs in 1964; the remaining four had 1964 TFRs that differed by 0.04 or less from their peak values.

For western and northern European countries, an examination of recent figures overlooks, of course, the long period of fertility decline that preceded the baby boom of the two immediate postwar decades. In most of these countries fertility during the 1930s, and in a number of instances even earlier, was well below the level represented by the rates for 1964, and, taking into account the then prevailing higher levels of mortality, also well below replacement level. But for most of the countries shown, the fertility registered by 1992 was at an unprecedentedly low level.

The conventionally calculated period (as distinct from cohort) measures of TFR, however, are difficult to interpret. When the overall level of fertility is low, as is the case in the countries under consideration, the particular timing of births over the reproductive age-span allows a rather wide degree of flexibility. If overlapping birth cohorts exhibit fertility behaviour that simultaneously responds to period influences, TFRs in any one year can be very poor indicators of the ultimate levels of cohort fertility. However, when TFRs remain below replacement level for a sustained period, the opportunities for making up lost time become, by necessity, severely constrained, and eventually nil. As is indicated in the last column of Table 5.1, in the southern European countries period TFRs have now been below replacement level for fourteen to nineteen years; in the northern and western European countries, with the exception of Ireland, they have remained below replacement level for periods ranging between twenty-one and twenty-seven years. These are durations too long plausibly to permit the eventual fertility of the component cohorts to reach replacement levels. Indeed, estimates for women born in these countries by the end of the 1950s (again, Ireland excepted)—cohorts for which the ultimate number of children born can now be predicted with reasonable accuracy—show *cohort* fertility also below replacement level (Sardon 1994).

Table 5.2 summarizes recent fertility experience in other currently low-fertility countries between 1960–5 and 1992, drawing on UN and World Bank estimates. The statistics in some of these countries are less accurate than those shown in the preceding table, but not sufficiently so to affect the overall picture. In 1960–5, of the sixteen countries shown, only Hungary had a fertility estimated as below a TFR of 2; Japan, Romania, and Ukraine had fertilities below 2.1. The four Asian countries other than Japan had TFRs ranging from Singapore's 4.9 to China's 5.6. By 1992, roughly a generation later, fertility rates in these countries were lower by 63–74 per cent; in Japan, with a TFR of 1.5 by 1992, the corresponding decline was 25 per cent. The four English-speaking countries outside Europe had TFRs between 3.3 and 3.8 in 1960–5; by 1992 they registered

TABLE 5.2 Total Fertility Rates in Selected Low-Fertility Countries, 1960–5 and 1992

	1960–5	1992	Change (%)
<i>Asia</i>			
China	5.61	2.0	-64
Hong Kong	5.31	1.4	-74
Japan	2.01	1.5	-25
Korea (South)	5.40	1.8	-67
Singapore	4.93	1.8	-63
<i>Eastern Europe</i>			
Bulgaria	2.18	1.5	-31
Czech Republic	2.21	1.9	-14
Hungary	1.82	1.8	-1
Poland	2.65	1.9	-31
Romania	2.01	1.5	-25
Russia	2.48	1.7	-31
Ukraine	2.08	1.8	-13
<i>North America</i>			
Canada	3.61	1.9	-47
United States	3.31	2.1	-37
<i>Oceania</i>			
Australia	3.27	1.9	-42
New Zealand	3.79	2.1	-45

Source: 1960–5: United Nations (1994a; 1992); World Bank (1994).

drops from those levels of 37–47 per cent. Precipitous declines of fertility during the period, bringing TFRs well below replacement level, were also experienced by Barbados and Cuba (UN 1994b) as well as Taiwan (Freedman 1995). Some important subnational populations, for example the Chinese population of Malaysia (Leete 1994), exhibit similar patterns of behaviour. The TFR in the former East Germany in 1991 was 0.98, an extraordinarily low figure for a population in excess of 15 million (Eberstadt 1994).

Owing to age distributions that reflect, albeit to different degrees, the high fertility levels of earlier years, given levels of total fertility rates can yield rather different levels of the crude birth rate. Thus, crude birth rates are a poor indicator of fertility, but it is through these rates that the effect of fertility behaviour bears on population growth. Levels of the crude birth rate (expressed per 1,000 population) for 1993 are shown in Table 5.3. The rates range from 9.3 in Germany to 17.6 in Singapore. In most of the countries for which up-to-date and accurate vital rates are available, the rate of natural increase, i.e. the difference between crude birth and death rates, is generally still positive, notwithstanding TFRs that are often far below replacement level. Yet, among the thirty-odd

TABLE 5.3 Crude Birth Rates in Low-Fertility Countries, 1993

No. of births per 1,000 population			
<i>Europe</i>		Portugal	11.5
Denmark	13.0	Bulgaria	10.0
Estonia	10.0	Czech Republic	11.7
Finland	12.8	Hungary	11.4
Ireland	14.0	Poland	12.8
Latvia	10.3	Romania	11.0
Norway	14.4	Russia	9.4
Sweden	13.5	Slovenia	9.9
United Kingdom	13.1	Yugoslavia	13.4
Austria	11.8	<i>Asia</i>	
Belgium	11.9	Hong Kong	11.9
France	12.3	Japan	9.5
Germany	9.3	Singapore	17.6
Luxembourg	13.4	<i>North America</i>	
Netherlands	12.8	United States	15.6
Switzerland	12.1	<i>Oceania</i>	
Greece	10.0	Australia	14.7
Italy	9.4	New Zealand	17.0

Source: United Nations (1995).

TABLE 5.4 Countries with Negative Rates of Natural Increase (r), per 1,000 Population, 1994

	r		r
Bulgaria	-2.6 ^a	Latvia	-6.8
Czech Republic	-1.0	Portugal	-0.8
Estonia	-5.2	Romania	-0.6
Germany	-1.4	Russia	-5.0 ^a
Hungary	-3.1	Slovenia	-0.2 ^a
Italy	-0.2		

^a Rates are for 1993.

Source: United Nations (1995).

countries with vital rates reported reliably enough to be included in the UN's *Monthly Bulletin of Statistics*, the latest available rates of natural increase (for 1993 or 1994) were already negative in eleven countries, all of them in Europe. These rates are shown in Table 5.4.

Given present levels of fertility, positive rates of natural increase will in time, in many cases in the near future, yield to absolute shrinkage of population size in each of the low-fertility countries, unless compensated by net immigration.

Clearly, recorded demographic experience during the past three decades lends little support to the notion that a TFR of approximately 2.1 represents a plausible temporary, let alone sustained, resting point for fertility trends—a point demarcating the end of the secular process of fertility transition. The empirical picture seems to lend no greater credence to 2.1 as the post-transitional level TFR than to, say, 1.5 or some other point in-between. Such fertility levels in the longer run imply not population stabilization, but rather negative rates of natural increase, decline in absolute population size (and possibly a decline at rapid relative rates). For example, a TFR of 1.5, if sustained for long in a closed population with low mortality (such as with an expectation of life of 80 years at birth), would yield an intrinsic rate of growth of -1 per cent per year. The half-life of such a population is 70 years.

CURRENT POPULATION FORECASTS

It has been suggested that, in reaching their decisions, US Supreme Court justices keep an eye on the election results. In a somewhat kindred fashion, demographers making population forecasts keep an eye on the latest vital statistics. Forecasts (or, as their makers usually prefer to call them, projections) prepared for Western countries during the two decades that preceded the baby boom regarded incipient population declines as all but certain. The best known and most elaborate forecasting exercise of the time looked ahead only for three decades from 1940. It foresaw negative growth commencing in western and central Europe by the 1960s (Notestein 1944). In retrospect, we know that those were the years of the most rapid population growth in that area during the present century.

By the mid-1950s, a number of changes—the spectacular postwar baby boom in the West, the shift in demographers' attention towards global population issues, and rising general interest in long-term development—rendered the perspective of 'incipient population decline' moot. Population growth was rapid just about everywhere, and by the 1960s the global rate was at the historically unprecedented annual level of 2 per cent. Such growth was, *prima facie*, unsustainable. How should, and will, it end? A simple version of transition theory, buttressed by references to humankind's snail-paced numerical progress on an evolutionary timescale, and, sometimes, references to Malthusian modelling, suggested an answer. It will, because it must, end by convergence to a long-term equilibrium of zero growth.

The projections that ensued from that premise explored the many possible paths to such an equilibrium. In practice, they were differentiated by more or less speedy stipulated declines of fertility to replacement

level; mortality change as an equilibrating mechanism was seldom permitted to enter the picture. This was logical: the stylized models were intended to focus attention on what interventionist policy could do to accelerate the coming of the inevitable stationary population, thereby helping to attain zero growth at a smaller absolute population size than would result from a slower approach to replacement-level fertility. Policies related to population growth were, first and last, fertility policies. Frejka's (1973) long-term projections, illustrating possible alternative paths to demographic equilibrium, were influential in envisaging population futures and the task of population policy intervention in this distinctive frame of reference.

Making such projections was a laborious process and, although it was soon made easier by the coming of the computer, it became monopolized by institutions that had good access to primary data and analytic skills, and were also geared up to producing new sets of projections for every country, and revising and reissuing them at frequent—even annual—intervals. An early model, designed by the most authoritative source of population projections, the UN Population Division, made explicit the assumption of the prospective stabilization of fertility at replacement or near-replacement level, but never below it (UN 1958: ch. I). The failure of Western societies in the 1930s to conform to such a model had been forgotten. If it was remembered, it was relegated to the rank of an aberration not expected to recur.

This stance became more difficult to defend as the decisive downturn of fertility trends in the industrialized world, and also increasingly beyond it, became manifest. Some fifteen years later, however, the practice still seemed to make good sense at the UN:

In the long run, the fertility level is expected to decline continuously and to reach the replacement level in every country, regardless of whether the country is currently developed or developing. In many countries of the more developed regions, the net reproduction rate is already approaching replacement level, close to unity. Once that level has been reached, the rate is expected to remain constant. (UN 1977: 7)

As the years passed, however, uncertainties concerning future fertility trends were increasingly emphasized in the UN's population forecasts. In practice, this meant the elaboration of alternative sets of projections. Most commonly, projections now came in three variants: a 'medium' projection was bracketed by alternative sets reflecting 'low' and 'high' assumptions concerning fertility trends. Most users of these calculations, however, preferred to ignore this complication, not unreasonably interpreting the 'medium' set as the UN's most plausible variant—in effect taking the 'medium' projection as the UN's best *forecast*. The medium variant, in turn, remained predicated on fertility's convergence to replacement

level. In the UN's long-term projections, that means a TFR of 2.06. When current TFR is above that level, convergence to replacement is assumed to vary in speed from region to region, but once fertility reaches 2.06 the assumption is that it stays put there; it is not allowed to sink to a lower level even temporarily. When current levels are below replacement, a slow crawl-back to a TFR of 2.06 is hypothesized. This calculation yields, for example, a global population estimate of 11.2 billion in the year 2100. By that time the global population should be very nearly stationary: the projected global 2150 figure, therefore, is virtually identical: 11.5 billion (UN 1992: 28).

More recently, this assumption became qualified: countries with currently below-replacement fertility are assumed to climb back to a TFR of 2.1 only in the 'high' variant projection. Coming from above, however, 2.1 remains an impenetrable floor for fertility in the 'medium' projection.

The increasing complexities of the UN's presentation of likely future population trends were undoubtedly welcomed by academics but less so by the projections' more common users, notably the media. These less patient consumers were happier to be illuminated about long-term demographic futures from a less pedantic but equally prestigious source. Since 1978 the World Bank emerged as a convenient supplier of basic population estimates and, as an added bonus, the Bank's projections spared the reader the trouble of being asked to consider alternative sets. The data appendix of the Bank's annual *World Development Report* became the standard reference not only for economic but also for basic demographic estimates. The first edition of the *Report* (World Bank 1978: annex table 16) offered three measures conceived by the vision of humankind's stationary demographic destiny. It gave, for each of the 125 countries it listed, the year when the net reproduction rate (NRR) was assumed to reach 1; the year when the stationary population would be reached; and the size of that hypothetical stationary population. As to the first index, for 'industrialized' countries the designated year was 2005. The year in which stationary bliss was attained varied; for example, Germany was to reach that point as early as 2005, Australia only in 2070. These indices appeared in every subsequent annual edition of the *Report*, although more recently specifying only two indices: the year when NRR is projected to reach 1 (a value equivalent, roughly, to a TFR of 2.05) and the size of the hypothetical stationary population. In 1994, for 'high-income economies' the former figure was generally given as 2030 (World Bank 1994: 210–13). For the detailed but still resolutely single-set country-by-country projections prepared by the Bank, the dedicated user could consult hefty background volumes, published every other year and containing long-term projections for each country in minute detail. The most recent of these volumes, for example, predicts that the number of women aged 25–29 in the Solomon Islands in 2150 will be 41,000, but that only 2,000

such women will live in St Kitts and Nevis. More to the point of the present discussion, it explains:

Where the [demographic] transition has been completed and total fertility is below replacement, it is assumed to stay at the current level for two quinquennia and then to return gradually to replacement, along a linear path, by 2030. (Bos *et al.* 1994: 14)

The notion that we can make a reasonably accurate forecast of what the size of the global population will be a century hence, and that the rate of growth of that global population and of each of its subcomponents (as demarcated by today's political boundaries) by that time will be, for all practical purposes, zero, are notions now thoroughly entrenched in the popular literature and in the general public's mind. For this, the World Bank can claim a disproportionate share of the credit. But these notions are, of course, thoroughly mischievous. The Bank's long-term projections for the global population in the years 2100 and 2150, for example, are frequently cited. In their latest version the figures are, respectively, 11.0 and 11.4 billion (Bos *et al.* 1994: 61). The closeness of these numbers to those of the UN's corresponding 'medium' forecasts—indeed, the pairs are nearly identical—should offer little comfort. The UN's long-range projections present a set of alternatives which (ignoring the plainly counterfactual 'Constant Fertility' projection) yield 2100 and 2150 global figures ranging from 6.0 to 19.2 billion and from 4.3 to 28.0 billion. None of these alternatives is shown in the accompanying commentary as being clearly more plausible than any of the others. Perforce, the assumption of zero growth at these future dates is merely conjectural. Finally, the implied demographic homogeneity of the component elements of the global total (homogeneity with respect to fertility levels and growth rates) is also plainly tenuous.

Hammered-in by friendly critics (see especially Keyfitz 1981; Lee 1991), the pointlessness of claiming long-term foresight—*de facto*, although not in technical notes only professionals bother to read—now appears to be conceded by the World Bank. The indices listed above will not, for the first time since 1978, appear in the 1995 *World Development Report*, and the series presenting detailed population projections has been discontinued. As the critics show, the confidence that can be placed in projected population figures deteriorates rapidly beyond a time horizon of twenty to thirty years. Competing and equally defensible assumptions can generate strikingly different trajectories by the middle of the twenty-first century. Exposure to the picture presented in United Nations (1994a) or Lutz (1991, 1994) and Cliquet (1993), or in Meadows *et al.* (1992)—the last showing graphs of projected population time-series reminiscent of a bowl of spaghetti—should generate a healthy agnosticism about single-line predictions of long-term population futures.

VIEWS FROM POPULATION THEORY

Agnosticism is healthy, but sound theory can reduce its sway. Modern scholarship has valuable insights to offer into the forces that shape fertility behaviour. It also helps us to understand fertility's past course and, to a degree, helps predict its future evolution. With all their ambiguities, the arguments of classical transition theory, such as Landry (1933, 1934), Notestein (1945), Davis (1945), and Blacker (1947), remain indispensable for demographers studying fertility change. Caldwell's (1976) landmark reformulation of transition theory and his many contributions to fertility theory at large will no doubt be grist for much discussion in future, as will be the intellectual context of those contributions, made up of competing or complementary conceptualizations of the determinants of fertility. Delineating that terrain would require references too numerous to list here, but works of special pertinence to the present discussion would certainly include Becker (1960), Easterlin (1961), Coale (1973), Ryder (1974), Andorka (1978), Ariès (1980), Bourgeois-Pichat (1981), Westoff (1983), Johansson (1987), van de Kaa (1987), and McNicoll (1994).

For the purposes here, the key common feature of the often sharply conflicting analyses set forth by these authors is that none of them provides support to the assumption that secular fertility change is constrained by a social mechanism that could be trusted to keep fertility from sinking below replacement level. (A possible exception to this generalization is Easterlin's work, concerned as it is with cyclical changes in fertility, rather than with its absolute level and central tendency.) A good many of the theoretical constructs offered suggest, in fact, a stronger statement: they warrant the expectation that the direction of social development in industrial societies will erode the supports necessary to prevent below-replacement fertility from becoming a routine feature of these societies. Instead of attempting to substantiate this claim here, I will cite two nineteenth-century commentaries that implicitly negate the existence of a homeostatic regulator set to deliver a TFR of 2.1 as the endpoint of the transition from high to low fertility.

The first of these commentaries is by Malthus. The young Malthus was of course a biological determinist; in his view, fertility, governed by the 'passion between the sexes', was not under effective social control. More sophisticated variants of this formulation—derived from Malthus, vintage 1798—continue to this day to dominate the views held by most biologists and ecologists on fertility behaviour. But the maturer Malthus was a social scientist, developing ideas about adjustment mechanisms for population growth fundamentally different from those governing the growth of animal species. In 1820, in his *Principles of Political Economy*, he posed the question: what are the possible consequences for the fertility of the labouring classes, that is the bulk of the population, that would flow

from 'high wages, or the power of commanding a large portion of the necessaries of life?' In short, what are the effects of economic development on fertility? One of his answers was the very opposite of what is commonly thought of as Malthusian. Workers, he wrote, instead of spending their improved wages 'in the maintenance of large and frequent families', would experience 'a decided improvement in the modes of subsistence, and the conveniences and comforts enjoyed, without a proportionate acceleration of the rate of increase'.

And what would be the causes of such a felicitous result? Malthus asked. His answer was:

all the circumstances which tend to elevate the character of the lower classes of society, which make them approach the nearest to beings 'who look before and after', and who consequently cannot acquiesce patiently in the thought of depriving themselves and their children of the means of being respectable, virtuous and happy. (Malthus 1989: 250–1)

He then described the social institutions that would bring about such an outcome. They included, above all, civil and political liberty, security of property, 'laws impartially administered', and general and high-quality education. Clearly, in naming these social constructs he described key elements of what Marx later called the 'superstructure' (a term that found frequent and potent uses also in Caldwell's social analyses): institutional arrangements that to a significant degree are under conscious social control. Furthermore, the behavioural responses discerned by Malthus are not bounded; the meaning of 'deprivation' and the definition of what makes a family 'respectable, virtuous and happy' are not physical categories but reside largely in the domain of ideas; in people's heads, influenced, in turn, by collective action. The resulting reproductive choices, then, may well mean fertility below, even far below, replacement level. This is Malthusianism, as commonly interpreted, stood on its head.

My second short-hand reference to theorizing on fertility change also highlights a potentially unconstrained downward dynamic in fertility trends. Here is John Billings, the noted American public health physician, explaining, in 1893, one of the reasons why US birth rates declined and will decline further:

[There has been] a great increase in the use of things which were formerly considered as luxuries, but which now have become almost necessities. The greater temptation to expenditure for the purpose of securing or maintaining social position, and the corresponding greater cost of family life in what may be called the lower middle classes, lead to the desire to have fewer children in order that they may be each better provided for, or perhaps, in some cases, from the purely selfish motive of desire to avoid care and trouble and of having more to spend on social pleasures. (Billings [1893] 1976: 281)

He went on to sound a Cairene theme, 101 years before Cairo:

Marriage is being held less desirable, and its bonds less sacred, than they were forty years ago. Young women are gradually being imbued with the idea that marriage and motherhood are not to be their chief objects in life, or the sole methods of obtaining subsistence; that they should aim at being independent of possible or actual husbands, and should fit themselves to earn their own living in some one of the many ways in which females are beginning to find increasing remunerative employment; that housekeeping is a sort of domestic slavery, and that it is best to remain unmarried until someone offers who has the means to gratify their educated tastes. They desire to take a more active part than women have hitherto done in the management of the affairs of the community, to have wider interests, and to live broader lives than their mothers and grandmothers have done. (Billings [1893] 1976: 281–2)

The power of social and economic forces pushing towards low fertility was amply demonstrated almost everywhere in the Western world by the third decade of the twentieth century. Writing in 1890, Arsène Dumont still believed that 'depopulation' was a special disease of French society. A few decades later, few European observers disputed that population numbers were headed downward everywhere in that continent. In 1922, Oswald Spengler (1928: 105) identified an 'appalling depopulation' as a main symptom as well as cause of the decline of the West (and placed the blame for it mostly on women). Enid Charles saw a twilight of parenthood (1934), and Keynes was resigned and matter-of-fact:

We know much more securely than we know almost any other social or economic factor relating to the future that, in the place of the steady and indeed steeply rising level of population which we have experienced for a great number of decades, we shall be faced in a very short time with a stationary or declining level. The rate of decline is doubtful, but it is virtually certain that the change-over, compared to what we have been used to, will be substantial. (Keynes 1937: 13)

After an interlude of roughly half a century, Keynes's words again seem to be addressing a real issue. What, if anything, ought to be done about it?

POLICY IMPLICATIONS

Writing in 1950, when the reappearance of low prewar birth rates was still the common expectation in the United States as well as in Europe, Frank Notestein contemplated the likely reaction to such an event:

Between now and the end of the century . . . many of the forces tending toward a reduction of family size are likely to continue in effect. On the other hand, we have yet to see a nation approaching a stationary population that did not launch

strong measures to stimulate childbearing. I expect that efforts to increase births will be one of the major preoccupations of those concerned with social legislation in the Western world. (Notestein 1950: 339)

This, of course, did not happen in the next three decades, as the problem Notestein envisaged did not arise; in fact, the focus of concern became rapid population growth, both in the domestic scene and in the international arena. But there are very few signs of a policy turn-around in the countries where below-replacement fertility became once again a reality, or arose for the first time, even though in earlier times that phenomenon elicited deep concern and at least half-hearted public policy measures intended to remedy the ailment. (For a chronicle, with a strong point of view, see Teitelbaum and Winter, 1985.) There are exceptions to this state of indifference, but more in rhetoric than in tangible measures. Even then, the concern seems to be prompted more by worry about loss of relative demographic weight in the international arena than by considerations of domestic welfare, judged by the familiar criteria of home-based social policy. Chaunu (1979) and Sauvy (1987) in France—continuing a well-established tradition reaching back into the nineteenth century—and Wattenberg (1987) are examples of this genre.

The main attitude, however, is indifference, or, in a number of European instances, a packaging of policy measures that are at least partially prompted by worries about low fertility, but are more palatable to the public if presented as serving social welfare objectives unrelated to any pronatalist intent (Moors and Palomba 1995). The explanation for this state of affairs in most cases is fairly obvious. Pluralistic democracies seek to avoid politically divisive issues, and genuine consensus about the consequences of below-replacement fertility and its impact on population change is largely missing. In many countries it can be reasonably argued that an extended period of negative population growth would be beneficial, presenting opportunities for improvements in the quality of life, individual and collective, that otherwise would not be open to high-consumption societies (Day 1992). Scepticism about the ability of social policies to influence fertility behaviour is pervasive, even though some of the demographic patterns that have emerged during recent decades in the West, notably in the domain of family formation, often betray unintended effects of deliberate social measures. Accepting demographic structures as outside the public policy domain, and seeking merely to accommodate them, are equally difficult. Western politics are ill-prepared for instituting non-incremental constitutional reforms—such as with respect to healthcare and social security, areas intimately connected with demographic changes generated by low fertility—even when the need for such reforms is widely recognized. A solid intellectual grasp on these and related issues is also lacking, and the requisite research base remains woefully inadequate. Still, the topics explored in some depth in

Davis *et al.* (1986) are bound to resurface with even greater urgency in the environment of sustained below-replacement reproduction. The Caldwellian theme of 'continued fertility decline' demands concerted attention from the social sciences.

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Intergenerational Wealth Flows and the Elderly in Indonesia

GRAEME HUGO

Among the prolific and varied contributions that Jack Caldwell has made to demography, perhaps the best known is his reformulation of demographic transition theory in terms of the changing structure and functioning of families and relations between generations. While this seminal theoretical work has been used to further our understanding of the fertility transition, it is the argument of this paper that its implications for other social and economic transitions occurring in developing societies have been neglected. The theory is in fact rich in insights into the patterns, causes, and consequences of changes in population mobility, the labour force, and ageing.

This paper seeks to demonstrate the relevance of the Caldwells' ideas to the development of understanding of the ageing transition being experienced to a greater or lesser extent in all countries of the world, but especially in less developed countries (LDCs) (United Nations 1992). The focus here is upon a single LDC, Indonesia, which has experienced rapid social and economic change since 1971 and, associated with this, a halving of fertility levels. The paper attempts to trace the implications of this change for ageing in Indonesia using the limited range of available census, survey, and case-study data as well as Caldwellian intensive field observation.

THE POSITION OF THE ELDERLY IN PRE-TRANSITIONAL SOCIETIES

While it is important to stress that there is no such thing as a 'traditional family', and that family systems vary widely between different societies (Mason 1992: 15), it is true that in most traditional societies the elderly tended to occupy a relatively favourable position. As Caldwell (1976, 1982) has pointed out, in such contexts the net intergenerational wealth flows over the lifetime of parents tends to be upward. The relatively favourable position of the elderly was associated with, and bolstered by, a number of elements:

1. The bulk of families were not only units of social organization but also the primary units of economic organization. Hence families controlled economic resources, and this gave additional authority to the older generation who controlled the productive resources of the family, especially through ownership of agricultural land.

2. Within this family mode of production, the elderly were assigned specific and significant economic roles. Moreover, with much production being family-based, care of older people was readily facilitated.

3. The prevailing normative system and customs entrenched the powerful position of the elderly. Filial piety, ancestor worship, respect for elders, and so on are inbuilt cultural 'props' to maintaining the elderly in a respected and privileged situation in traditional societies.

4. In a traditional pretransitional situation of high mortality and high fertility, numbers surviving to older ages are very few indeed. As a result, the number of economically active people in such a society available to support the small numbers of older dependants is very large. Hence the burden of caring for the elderly is shared by a large number of children and grandchildren.

5. Moreover, in the situation of relatively low population mobility, the extended family tend to be concentrated within a fairly limited geographical area so that they are readily available to provide economic and social support for the elderly.

In the traditional, pretransitional situation the emotional and often residential extension of the family entrenched and supported the strong position of the elderly. The net intergenerational lifetime flow of wealth was very much in favour of the older generation.

THE IMPACT OF MODERNIZATION ON THE POSITION OF THE ELDERLY

Caldwell has made a singular contribution to the explanation of the fertility transition in drawing attention to the significance for fertility change of the changing structure and functioning of the family and of shifts in the role of women as economic and social development proceeds, in identifying the fundamental issue as being the shift in the direction and magnitude of net intergenerational wealth flows within the extended family, and in identifying the fundamental importance of the achievement of mass Western-type education in bringing about these changes in the family.

The focus of attention in research has understandably been on the implications of these changes for fertility. However, the reversal of the net intergenerational flow has implications not only for the young. The other side of the coin of a shift in intergenerational wealth flows is that there will be a deterioration in the welfare of the elderly since resources

previously channelled to them are redirected to younger generations. As a society undergoes the fertility transition, it could be expected that the position of the elderly will change because of the following.

1. The power of the elderly declines as the family ceases to be the dominant unit of economic production. As family members become employed in non-family enterprises, those members can gain greater control over their income. The control of the means of production is no longer vested in the hands of older family members.

2. With changing roles of women, more women will be working outside of the home so that care of the elderly will not be achieved as readily as it was when the family was the unit of economic activity.

3. With improved mortality and reduced fertility, the ratio of available economically active family members to the numbers of older members needing support will narrow and the task will not be spread across as many helpers as in a traditional society.

4. With higher levels of education and greater emphasis on individualism and individual achievement, the power of the older generation over the younger may be reduced. The norms and customs 'propping up' the favourable position of the elderly in traditional society may be eroded to some extent.

5. With higher levels of population mobility, it is more likely that the children of the older generation will not be available locally to directly assist in their parents' support.

For each of these reasons, it could be anticipated that, as the fertility transition proceeds, flows of wealth, commitment, and loyalty are strengthened from parents to children and laterally between partners, and the upward flows to parents may be reduced.

There is, however, by no means a consensus in the literature regarding the impact of the fertility transition upon the average levels of well-being of the aged in a society. It is possible to recognize three broad schools of thought, and these are depicted diagrammatically in Fig. 6.1. The first approach, shown in panel (a), suggests that there is an inverse relationship between the levels of modernization, urbanization, and industrialization in a society and the status accorded that society's aged population. This is the position taken by Cowgill and Holmes (1972), who suggest that, largely for the reasons enumerated above, the position of the aged deteriorates as modernization proceeds. They are the major losers as the transition from emotionally extended to emotionally nucleated families proceeds. Heisel (1985: 59), however, argues that 'social development does not necessarily result in a worsened situation for the aged . . . research in developed countries demonstrates that family organizations have changed but family and kinship networks have often still remained rather strong'. She goes on to suggest what is essentially the second model in Fig. 6.1,

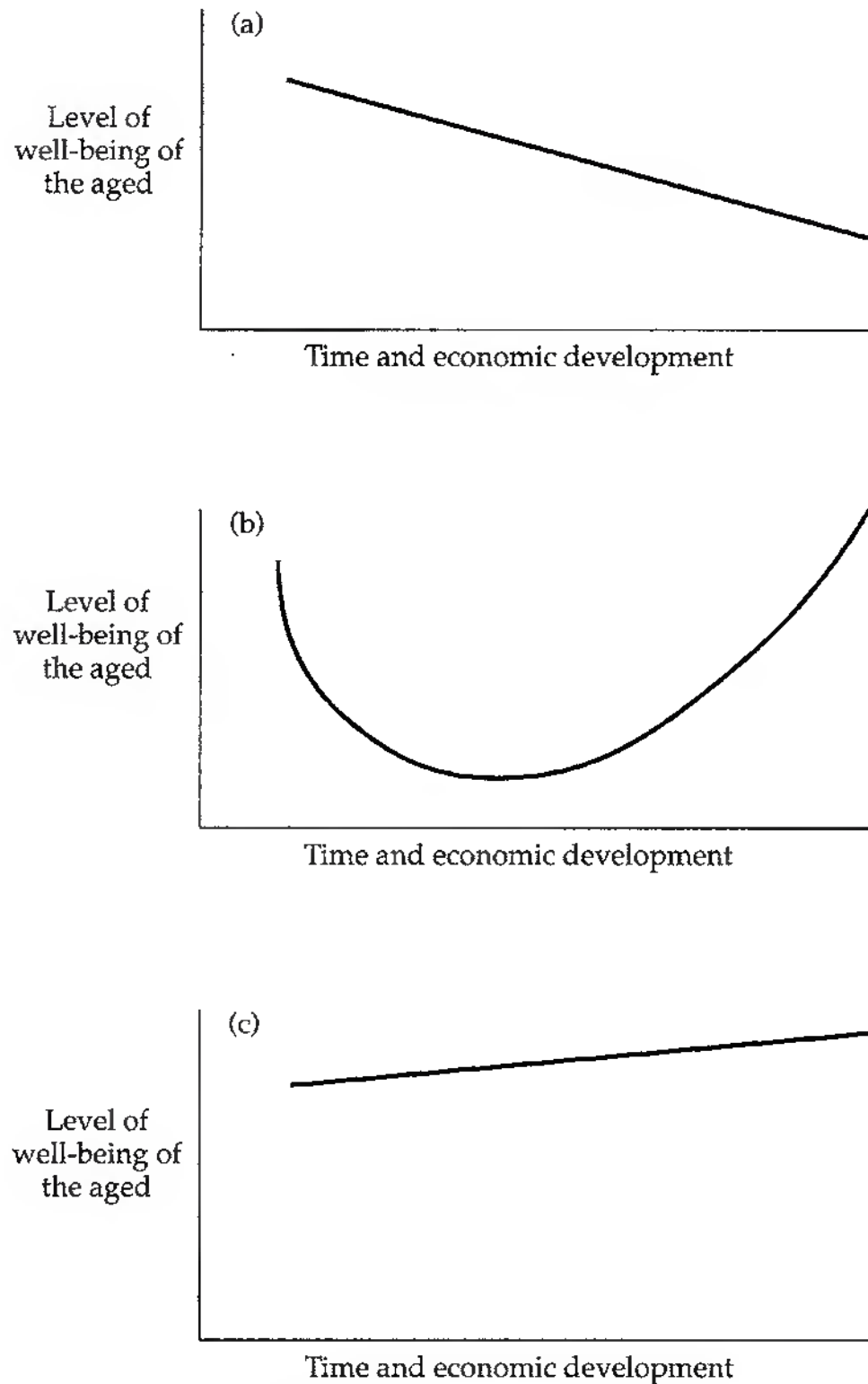


FIG. 6.1 Alternative models of the relationship between development and the level of well-being of the aged

- (a) Decline in well-being
- (b) Initial decline in well-being followed by improvement
- (c) Little change or steady improvement in well-being

i.e. 'that the relationship between the status and well-being of the aged and modernization may be U-shaped rather than linear'. This is based on the observations of such researchers as Palmore and Manton (1974) that the 'early stages of economic development correspond to the relative decrement of resources held by the aged, but in economically advanced nations entitlements such as pension plans begin to redress the previous losses incurred' (Heisel 1985: 59). Essentially, then, this model is one in which it is assumed that formal, institutional support systems are gradu-

ally developed to substitute for informal systems which are weakened as social and economic change occurs. It represents a transition from high levels of well-being based on family support to high levels of well-being in which institutional supports are a major component. An interesting element in the model is the suggestion that there is an intervening period of low average levels of well-being in which emerging governmental support is not sufficient to counterbalance the reduction in family-based support. Some commentators would suggest that many contemporary Asian nations are at various points along the downward slope of the curve in Fig. 6.1(b). If this is the case, it would mean that the current generation of elderly in such countries are an unfortunate 'twilight' generation who have access to neither the benefits of a pretransitional net upward intergenerational wealth flow nor a modern pension and social security system.

The third model presented in the figure is based largely upon a rejection of the notion that there is a massive withdrawal of family support from the elderly as modernization and urbanization proceeds. For example, careful research into intergenerational relations within families and the well-being of older people in Europe, North America, and Australia, both historically and in the contemporary period, would suggest that the decline in family support with development has been exaggerated and that in most MDCs (more developed countries) family support of the aged has been maintained (Hunt 1978; Evandrou *et al.* 1986; Rowland 1991). Certainly there is generally a lower incidence of the elderly living with their children and grandchildren, but, rather than representing a negative development for the elderly, this usually reflects their desire for greater autonomy and freedom and their improved average economic situation, which allows maintenance of an independent household as long as health permits (Michael *et al.* 1980; Wall 1984; Day 1985; de Vaus 1994). Moreover, in many MDCs the development of state-funded pension schemes and other benefits, and the increasing proportion of old people who are able to accumulate substantial assets (especially housing) during their working lives, has led to an improvement in the average level of well-being of the elderly (see e.g. Hugo 1986).

The models presented here are oversimplified but do indicate the wide range of views that are currently held on the effect of the fertility transition on the well-being of the aged. What is clear is that there is considerable variation between countries in these impacts and that it is unlikely that a single model will have universal applicability. Indeed, it would seem that cultural differences between societies play a significant role in determining the position of the elderly as the fertility transition proceeds. For example, it is apparent that, in societies where ancestor worship and filial piety have been very strong, cultural and social norms according the elderly high status have persisted more strongly. Hence Table 6.1

TABLE 6.1 Percentage of Elderly Population Living Alone: Selected Data from the 1980s^a

Developed countries	%	Developing countries	%
Australia	26.2	Brazil	9.8
Austria (60+)	30.9	China (60+)	3.4
Belgium	31.9	Costa Rica	6.9
Canada	27.7	Cuba	10.0
Czechoslovakia (60+)	32.4	Indonesia (60+)	8.0
Denmark	38.3	Israel	26.1
France	32.6	Jamaica	23.0
Germany (West)	38.9	Kenya (50+)	16.1
Greece	14.7	Korea, Republic of (60+)	2.2
Hungary	24.8	Malaysia (60+)	6.4
Italy	25.0	Mexico (60+)	6.4
Japan	9.7	Philippines (60+)	3.0
Luxembourg	22.6	Singapore (60+)	2.3
New Zealand	26.4		
Sweden	40.0		
United Kingdom	30.3		
United States	30.5		

^a Unless otherwise indicated, the elderly here are defined as those aged 65 and over.

Source: Kinsella and Taeuber (1993).

shows that in Japan the proportion of older persons living on their own is only one third that of the United States. As Mason (1992: 19) has pointed out,

family systems in Asia vary considerably and did so long before urbanization, industrialization and migration came to have major impacts on family organization. Although the full implications of each type of system for the care and support of the elderly are not known, family reorganization in the face of major macro-economic and socio-political changes seems likely to reflect the pre-existing nature of the family system. Therefore, we would expect the situation of the elderly to vary in different parts of Asia and the Pacific, not only because of differing levels of economic development, but also because of varying types of traditional family arrangements.

Although the empirical database on the elderly in LDCs is growing quickly with such projects as the Comparative Study of the Elderly in Asia (at the Population Studies Center of the University of Michigan¹) and the work of the Population Division of the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP),² our understanding of the impact of the rapid fertility transitions being experienced in Asia upon the status and well-being of the elderly is limited (Hermalin 1995). The remainder of this paper turns to the case of Indonesia, where this knowledge base is extremely limited but where, it is argued, the need for understanding is pressing.

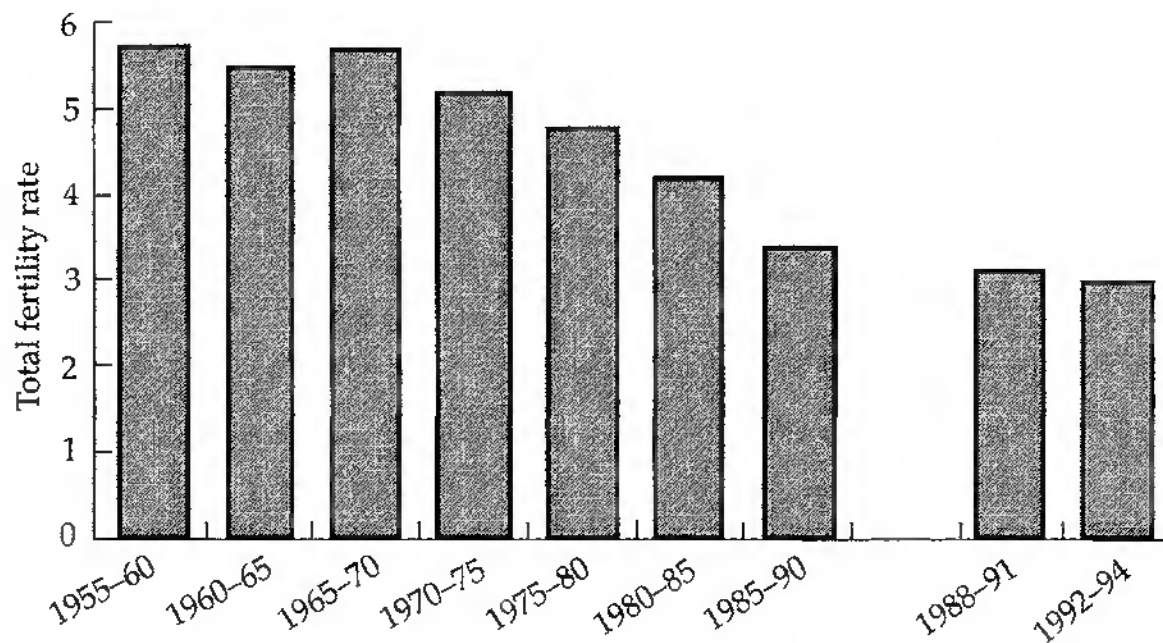


FIG. 6.2 Total fertility rates, Indonesia, 1955-1994

Source: Indonesia Demographic and Health Surveys, 1992, 1994.

THE FERTILITY TRANSITION AND FAMILY CHANGE IN INDONESIA

Of all the waves of social, economic and demographic change that have transformed Indonesia since 1971, none has been so striking or far-reaching in its consequences as the decline in fertility. Figure 6.2 shows the extent, speed and trajectory of this decline. The total fertility rate (TFR) declined from the late 1960s, when it stood at around 5.6 children per woman, to 5.2 in the early 1970s and 4.68 in the late 1970s. At the 1990 census the TFR for the 1985-90 period was measured at 3.326 and at the 1994 Indonesian Demographic and Health Survey a level of 2.856 was recorded for the previous two years. Hence in Indonesia fertility has been halved during the last quarter-century.

The processes shaping this change have been complex but are associated with significant changes in the role and status of women, a highly efficient family planning programme backed up by strong government commitment, and shifts in the structure and functioning of the family. To any close observer of Indonesia, the changes in the family have been considerable. However, the amount of research and literature addressing these changes has been limited. The enormous ethno-linguistic and cultural diversity of the nation means that it is difficult to generalize, but the following trends with respect to families would appear to be occurring in contemporary Indonesia.

There have been major changes in *marriage patterns* (Jones 1994). As Fig. 6.3 shows, the average age at first marriage for women has increased by two years over the last two decades. Moreover, whereas in the early 1970s most marriages were arranged by parents, the proportion of 'love marriages' has increased greatly so that they probably now account for the majority of marriages in the nation.

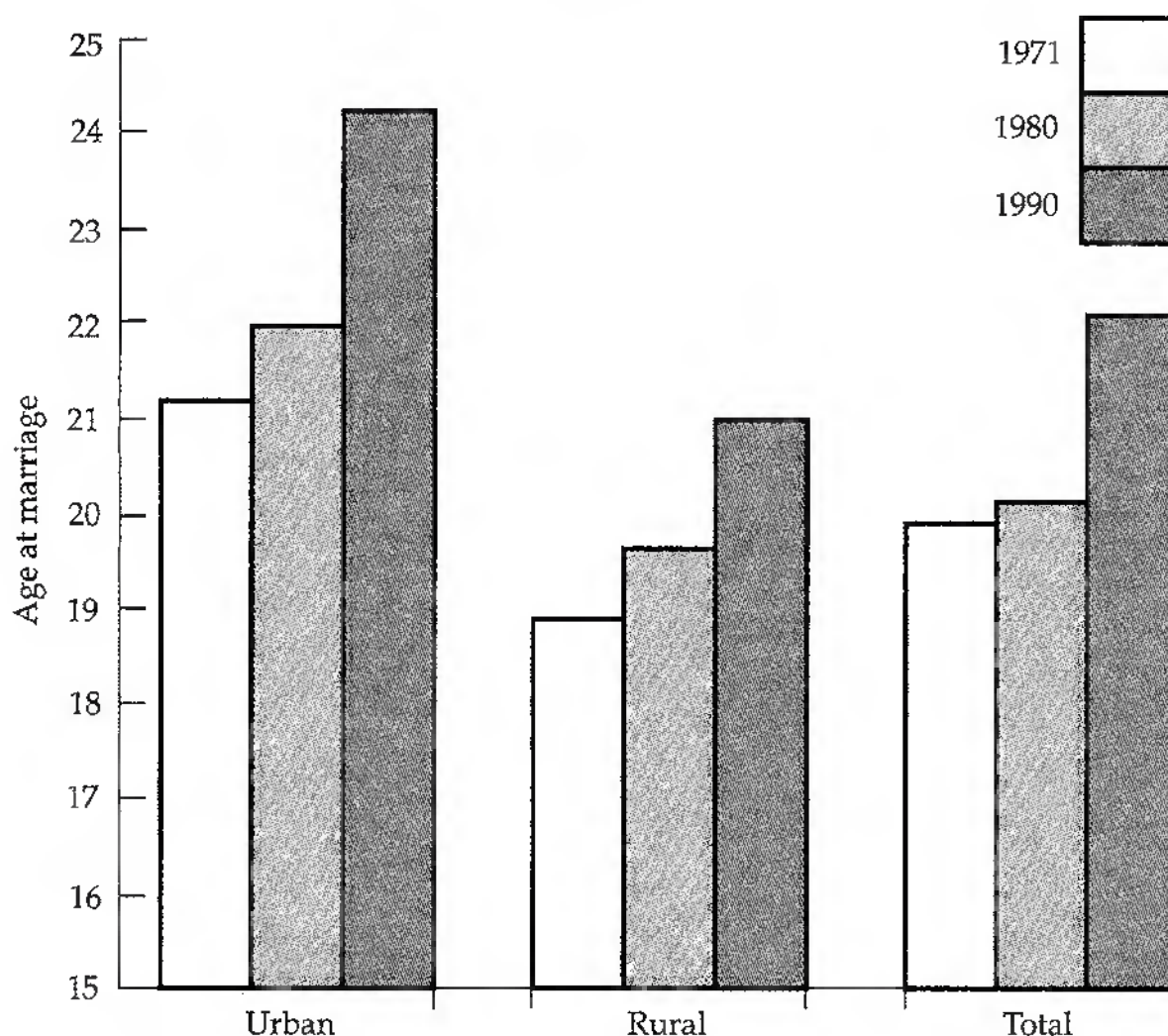


FIG. 6.3 Average age at first marriage for women, Indonesia, 1971, 1980, and 1990

Source: Hatmadji and Anwar (1993).

TABLE 6.2 Percentage of Population Living as Non-Nuclear Members of an Extended Family, Indonesia, 1971–1990

	% who are grandchildren, parents, parents-in-law or other non-nuclear relatives of household head
1971	13.4
1980	12.1
1985	11.8
1990	9.4

Source: Indonesian Censuses of 1971, 1980 and 1990; Intercensal Survey of 1985.

While the crucial change identified by Caldwell is the shift from an *emotionally* extended to an *emotionally* nucleated family, it is interesting to note that the population of Indonesians living in residentially extended families (i.e. living under the one roof) has declined from 13.4 per cent at the 1971 census to 9.4 per cent at the 1990 census (Table 6.2). Of course, residential cohabitation cannot be taken as an indicator of degree of family support, but the data in Table 6.2 do point to a significant change.

Polygamy has decreased substantially in incidence. Increasing proportions of Indonesians are working outside of the familial mode of

production. Informal-sector activity often is owned and operated on a family basis. However, between 1980 and 1990 employment in the informal sector increased by 29 per cent while that in the formal sector increased by 75.8 per cent (Hugo 1993).

Although female workforce participation outside of the home is grossly underestimated in Indonesian data, census figures show an increase from 31.5 per cent in 1971 to 39.2 per cent in 1990 (ILO 1993). However, these statistics do not reflect the huge increase over the last decade in women working in factories in and around Jakarta, elsewhere in Java, and overseas (Hugo 1992, 1995, 1996).

While existing data make it difficult to quantify the extent of change in the size, structure, and functioning of families in Indonesia, it is apparent that significant changes have been occurring. Moreover, it is equally clear that the forces identified by Caldwell as bringing about such changes are strongly in evidence in Indonesia. Almost all children in Indonesia now receive some primary education. Indeed, the current five year (1994–9) plan has as an objective, making not only the six years of primary school compulsory but also the first three years of high school. Caldwell (1982: 303–5) suggested that the impact of mass formal education on fertility was not direct but indirect through restructuring of relationships within the family. He identified five mechanisms through which education has such an impact (Dissanayake 1995).

1. It reduces the child's potential work inside and outside the home.

2. Education increases the cost of living far beyond the fees, uniforms, and stationery demanded by the school. Schools place indirect demands on families to provide children with better clothing, better appearance (even extending to feeding), and extras that will enable the child to participate equally with other schoolchildren. But costs go far beyond this. Schoolchildren demand more of their parents than do their illiterate siblings who are fully enmeshed in the traditional family system and morality.

3. Schooling creates dependency, both within the family and within the society. In the absence of schooling, all members of the family are clearly producers–battlers in the family struggle for survival. With schooling, it becomes clear that society regards the child as a future rather than a present producer, and that it expects the family to protect the society's investment in the child for that future. All these changes make children less productive and more costly both to the family and to the society.

4. Schooling speeds up cultural change and creates new cultures. In the West, values of the school were clearly middle-class values, and the school imposed as many of these on the working class as it could. However, schools induced changes in all classes, partly because, by their nature and their very existence, their agenda was so obviously that of the broad society and its economy—its capitalist economy—and not that of family production and the morality that sustained that production.

TABLE 6.3 Indicators of Access to Mass Communication Media, Indonesia, 1980, 1990 and 1991

	Numbers	% of population with access
<i>Radios</i>		
1980	12,311,307	40.8
1990	22,646,134	57.1
1991	n.a.	54.7
<i>Televisions</i>		
1980	2,940,470	9.8
1990	10,200,071	25.7
1991	n.a.	28.2

Source: Central Bureau of Statistics, IDHS.

5. In the contemporary developing world, the school serves as a major instrument for propagating the values not of the local middle class, but of the Western middle class. Little is taught or implied that is at odds with Western middle-class values, while traditional family morality is disdained or regarded as irrelevant and as part of that other non-school, pre-school—even anti-school—world.

These changes are in train in Indonesia as are other important processes. The role of mass media in presenting different models of family structure and functioning in an attractive context is often downplayed in studies of family change. However, it is likely that such forces have been important in Indonesia. Table 6.3 shows that availability of such media in Indonesia has increased substantially in recent years.

The fertility transition is hence well under way in Indonesia, and family structure and functioning is also undergoing rapid change. What then is the situation of Indonesia's older population in this context of rapid fertility transition?

THE CHANGING SITUATION OF THE ELDERLY IN INDONESIA

The rapid course of the demographic transition in Indonesia is having a significant impact on its age structure. A recent global analysis by Kinsella and Taeuber (1993) found that over the next three decades Indonesia will have the most substantial percentage increase in its aged population of any nation in the world. The impact of two decades of sustained fertility decline is apparent in Table 6.4, which shows that in the last intercensal decade there were rapid growth rates in the older age groups and low growth rates in the dependent child ages. Between 1971 and 1990 the

TABLE 6.4 Change in Numbers in Age Groups, Indonesia, 1980 and 1990

Age group	1980 ('000)	1990 ('000)	Change, 1980-90	
			'000	%
0-4	21,294	20,887	-407	-1.9
5-9	21,335	23,081	+1,746	+8.2
10-14	17,704	21,437	+3,733	+21.1
15-19	15,358	18,919	+3,561	+23.2
20-24	13,065	16,148	+3,083	+23.4
25-34	19,605	28,732	+9,127	+46.6
35-44	16,048	19,253	+3,205	+20.0
45-54	11,617	14,320	+2,703	+23.3
55-64	6,651	9,502	+2,851	+42.9
65+	4,793	6,962	+2,169	+45.3
Not stated	7	8	+1	+14.3
Total	147,477	179,249	+31,772	+21.5

Source: Indonesian Censuses of 1980 and 1990.

population aged 65 years and over more than doubled, from 2.968 to 6.751 million, and the proportion that they make up of the total population increased from 2.5 to 3.8 per cent.

The shifts in the national age structure are shown in Fig. 6.4. The declines in fertility have seen the child dependency ratio in Indonesia fall substantially, from 82.1 in 1971 to 53.9 in 1995, and the overall dependency ratio fall from 86.8 to 60.6. The aged dependency ratio, however, is beginning to increase although it is still substantially lower than the youth ratio. Official projections show these patterns continuing for the next two decades, with the aged dependency burden in 2005 being almost double that in 1971 while that of the young is almost half that of 1971 (Fig. 6.5). Moreover, it is likely that these tendencies will continue during the early part of the twenty-first century. Chen and Jones (1988: 19) project the total dependency ratio to fall to 45 in the year 2020 and thereafter increase owing to the rapid increase in the aged dependency ratio, and to return to 1980 levels by around 2050. They identify 2045 as the critical year when there is the important crossover, after which the aged dependency ratio will be greater than the child dependency ratio.

Clearly, the rapid Indonesian demographic transition is having some significant impacts on the age structure of the population. An important policy issue which emerges from this is the need to at least maintain and preferably enhance the quality of life of older Indonesians in the face of their rapidly increasing numbers. All of the work on the elderly in Indonesia (Chen and Jones 1988; Sigit 1988; Hugo 1992) underlines the overwhelming importance of the family in caring for the elderly. This raises the question as to what the implications of the family changes

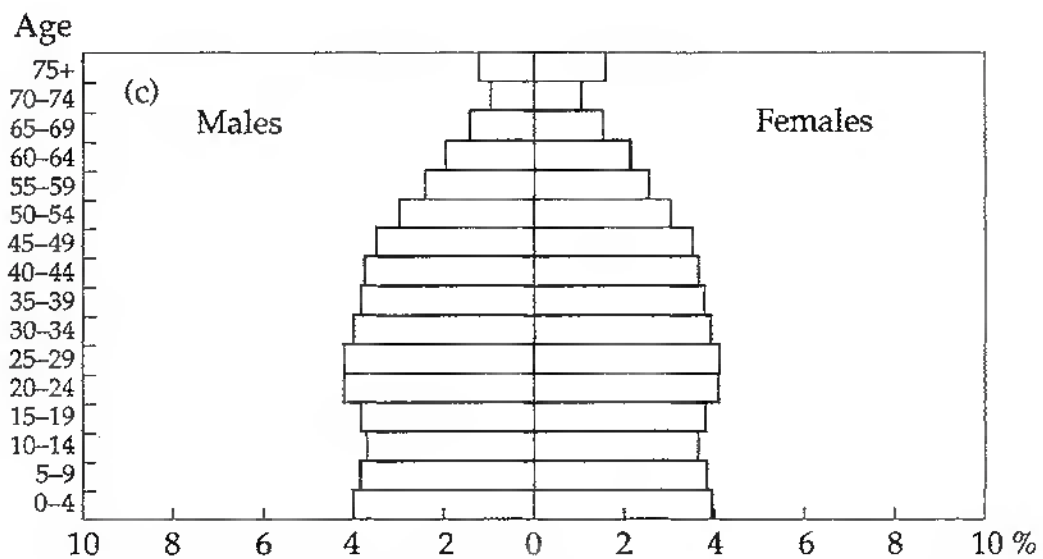
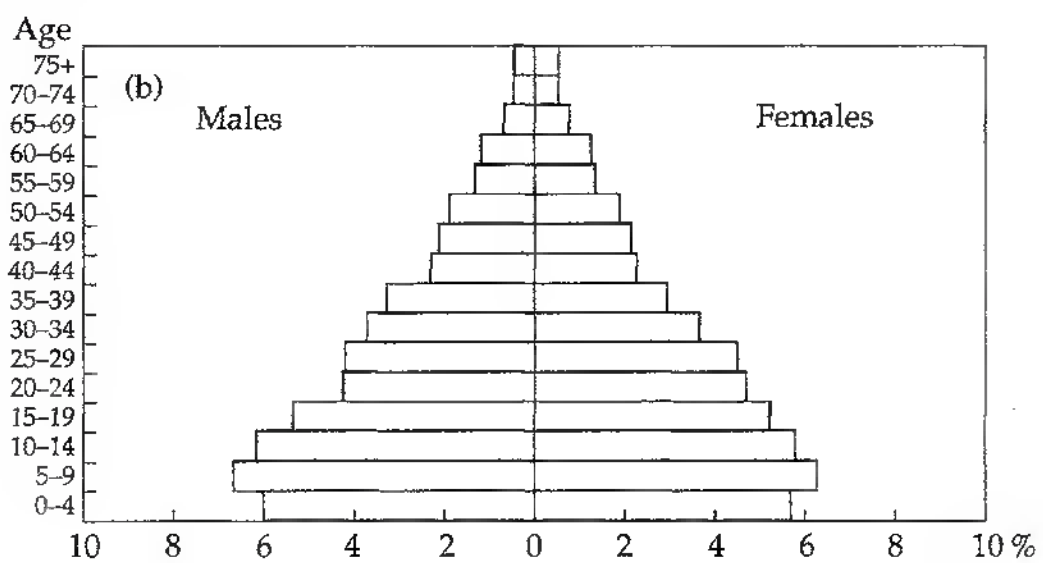
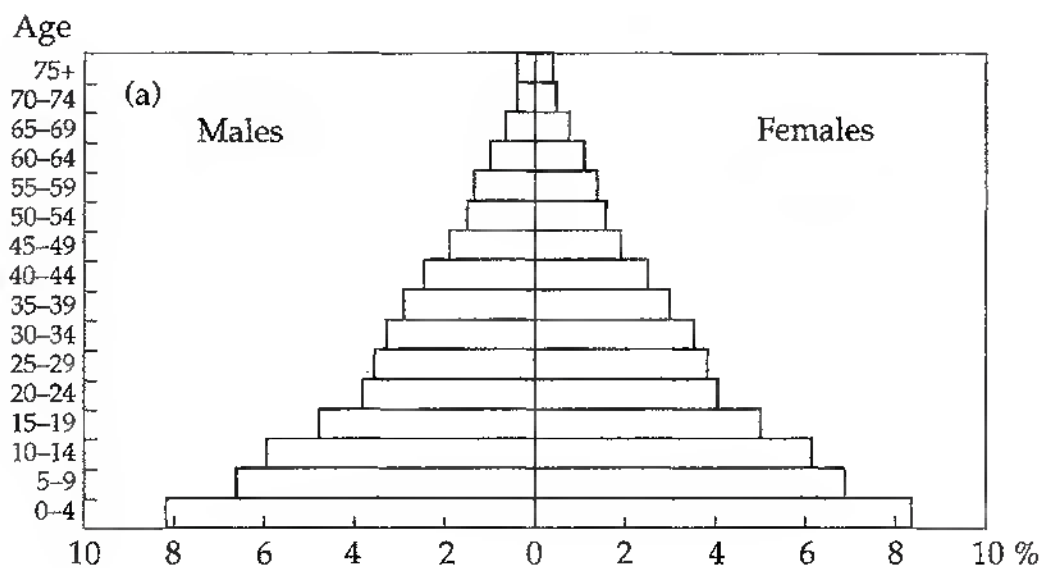


FIG. 6.4 Age-sex distribution, Indonesia
 (a) 1970
 (b) 1990
 (c) Projected distribution, 2020

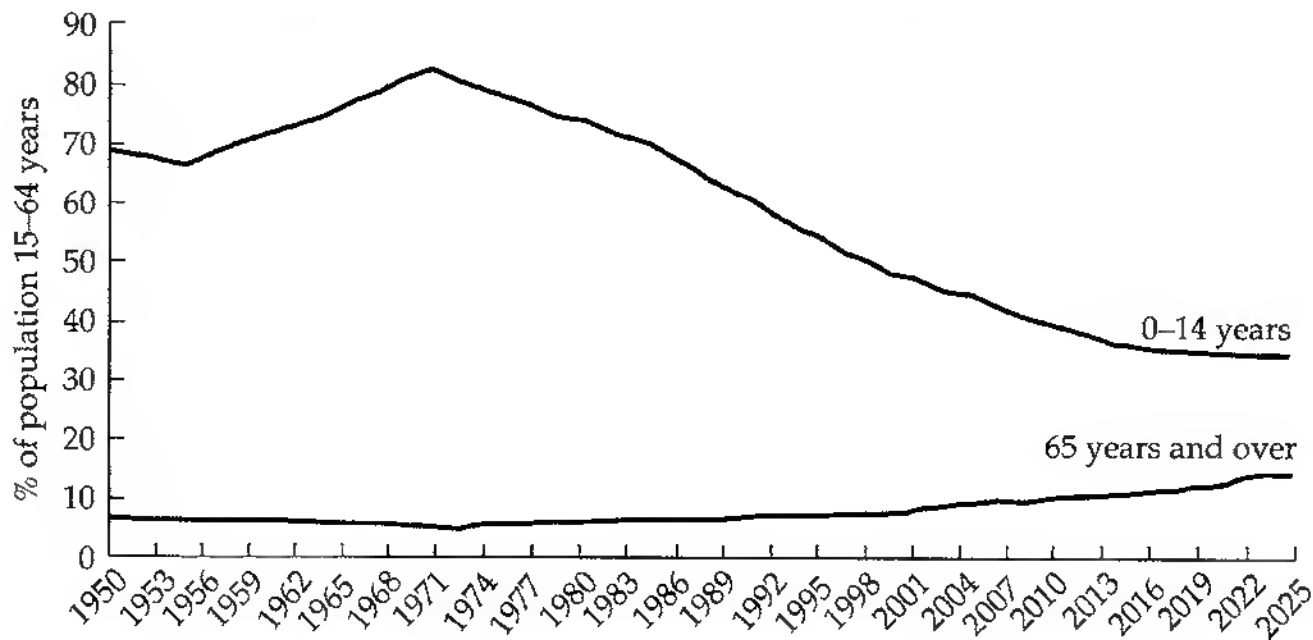


FIG. 6.5 Actual and projected youth and elderly dependency ratios, 1950-2025

Source: United Nations (1993); Indonesia Censuses of 1971, 1980, and 1990; Intercensal Survey of 1985.

noted earlier are for the well-being of the elderly. Unfortunately, we have very little empirical evidence relating to the well-being of the elderly in Indonesia, let alone time-series information on shifts in levels of well-being. Moreover, measurement is very difficult in semi-subsistence economies and situations where there are complex community and family support mechanisms. Nevertheless, it is possible to make a number of observations regarding the extent of available family support for the elderly, the present economic situation of the elderly, and the availability of government support for the elderly.

First, it is important to ask the question: to what extent are the elderly of Indonesia still able to access family support? A survey in Java (Sigit 1988) sheds some light on the extent to which older people have access to family-based support systems. In urban areas, 10.1 per cent of older persons had no living children and 27.9 per cent had only one or two. The equivalent proportions in rural areas were 8.7 and 28.6 per cent. These proportions were especially high for women (14.2 and 35.2 per cent in urban areas and 11.2 and 34.2 per cent in rural areas). Sibling support is also limited, with 50.1 per cent of older urbanites having no brothers still alive and 41.4 per cent having no living sisters. In rural areas the equivalent figures are 46.4 and 42.5 per cent respectively. Even in cases where the urban elderly have living children, only 34.2 per cent receive visits more than weekly and 40.4 per cent receive visits infrequently, hardly ever, or never. In rural areas the equivalent percentages were 54.6 and 26 per cent.

Hence it is clear that it is possible to exaggerate the extent to which family support is accessible or even available to elderly people in Indonesia. Moreover, with higher levels of migration, the likelihood that an elderly person will have a child living close by will be reduced. Similarly,

with increased participation of females in the workforce outside the home (Hugo 1992), the availability of caregivers in the family house is declining. While detailed micro-level research on the issue of whether family support for the elderly is decreasing or not is lacking, Evans's (1990) study in Solo, Central Java, concluded that the popular Javanese perception of universal veneration of the elderly, and of unconditional and complete support for them being provided within the bosom of the family and the local community, is to some extent a myth.

The fact that attitudes about family support for the elderly may be shifting somewhat in Indonesia is reflected in the increased availability of institutional accommodation for the elderly in cities like Jakarta. In the early 1980s, Adi (1982) reported that there were only nine institutions for the elderly with a capacity of 420 residents. By the mid-1990s, however, there were 52 institutions with 3,102 residents. Nevertheless, this is still a very small provision in a city approaching 10 million in population size. A mid-1980s survey in Java found that nearly one half of older people believed that nursing homes were important (48.3 per cent) but only 15.2 per cent indicated that they would be willing to live in such an institution (Rudkin 1994a).

Local communities have been an important component of non-family support provided to the elderly in Indonesia, especially where older people have no children or where their children do not live in the local community. The tradition of *gotong royong* (mutual self-help) is a strong one, especially in rural communities. Nevertheless, such support often has taken the form of providing bare subsistence needs and ensuring survival rather than a happy, fulfilling life for the older people involved. Moreover, the extent to which this tradition has been transported into urban areas is questionable, and like many established practices in rural areas it is increasingly being changed.

Turning to the second set of observations, in the 'data-poor' situation in Indonesia it is very difficult to establish the contemporary economic situation of the elderly, let alone detect any time-series trends. The semi-subsistence nature of some rural economies and significant intra-family and intra-community transfers all make it very difficult to measure the economic well-being of elderly households in Indonesia. Nevertheless, there are certainly indicators that the elderly are less well-off on average than the remainder of the population; and they have not shared in the overall improvements in economic well-being in Indonesia since 1971 like other groups. Hence a longitudinal survey of some 35 villages in Java over the 1969–93 period concluded:

Twenty five years ago poverty was a widespread problem in both rural and urban Java. At the present time it may be true to say that poverty in rural Java is primarily found among the older people with no children and the single women supported by their families. (Collier *et al.* 1993: 1–1)

One official estimate in the early 1980s (quoted in Adi 1982) estimated that around 30 per cent of the elderly population were living in the poorest of poor conditions—substantially above the proportions for the population as a whole (Hugo *et al.* 1987). There is no reason to believe that this situation has changed, as elsewhere a number of developments in the Indonesian economy have been identified which may have had detrimental effects on the aged (Hugo 1988).

The increased importance of the formal sector in the economy is resulting in an increasing exclusion of the aged from economic production processes. In the rural and urban informal sectors, in which the extended family is often the unit of production, there is no concept of a mandatory retirement age and elderly people are readily incorporated, although their specific roles in production may change as their physical capabilities decline. Related to this is the fact that older workers find it especially difficult to compete in the formal sector of the labour market because they are generally less well educated than the younger generations which reached school-going age during the postwar expansion of education that resulted in much higher proportions proceeding to high school and tertiary education than had been the case with the cohorts moving into these ages in the 1920s, 1930s, and 1940s. The rapidly increasing costs of living in Indonesia, especially in urban areas, associated with the immense pressure being placed upon housing, land, services, food, etc., are especially hard-felt by the aged. This is because such a high proportion of them do not have the independent power to compensate for such increases through obtaining higher incomes.

There have been some significant gender differentials identified in the economic well-being of the elderly in Indonesia. Rudkin (1993) has shown that, at both the individual and household level, older women have fewer resources and lower levels of well-being than their male counterparts. This gender dimension of ageing is made even more significant in light of the fact that life expectancies for women are higher than those for men and that women generally marry men older than themselves. As a result, most Indonesian women spend the latter years of their lives as widows while most men can rely on the support of their wives as they grow frail (Mason 1992: 29).

With respect to the third issue, of access of the elderly to forms of support other than those provided by the family as intergenerational exchanges undergo change, access to social security in Indonesia remains limited. Most older Indonesians are not subject to a mandatory retirement age and continue to work as long as they possibly can. Hence in 1990, 48.1 per cent of Indonesians aged 60 years and over were employed: 35 per cent in urban areas and 53 per cent in rural areas (Wirakartakusumah and Mundiharno 1994). This has not changed since 1971, when the participation rate was 48.6 per cent.

TABLE 6.5 Growth in the Number of Government Employees Covered by Pension Plans, in Indonesia, 1986-1993

Type of employee	No. of government employees ('000)									
	1986	1987	1988	1989	1990	1991	1992	1993		
Central government	2,947.2	2,978.5	3,156.2	3,265.5	3,291.1	3,428.0	3,516.9	3,594.2		
Regional government	438.4	446.1	468.7	473.3	480.2	489.9	497.8	507.1		
Government-owned enterprise	142.3	147.7	154.9	170.3	170.5	178.4	183.7	109.7		
Total	3,527.9	3,572.3	3,779.8	3,909.1	3,941.8	4,096.3	4,198.4	4,211.0		

Source: P. T. Taspen, Jakarta (unpublished data).

The ASEAN Ageing Survey (Chen and Jones 1988) found that 61 per cent of elderly Indonesian males and 34 per cent of women were in the workforce. Nevertheless, as is the case elsewhere, with the onset of old age the capacity of Indonesians to earn their own living declines and they are forced to reduce their workload or move out of the workforce altogether. A survey in Java found that 35.7 per cent of elderly people in urban areas not working left the workforce for health reasons, while this applied to 50.7 per cent of their rural counterparts (Sigit 1988).

In situations where the elderly are unable to work, or unable to work enough to earn a living, their level of well-being is going to depend upon the extent to which they have been able to accumulate wealth and assets during the period of their more active working years, the extent to which their children and other younger family members are willing and able to give them support, the extent to which government provides support, and the extent to which other elements in the community give support (e.g. friends, NGOs, etc.).

First, with respect to the 'accumulation of assets' factor, there are strong indications that the current generation of elderly persons in Indonesia have not been able to share in the economic benefits of Indonesia's development since 1975 to the same extent as have younger generations. This is partly associated with the fact that the elderly of Indonesia have very low levels of formal education, having passed through their childhood and young adult years during the colonial occupation when educational opportunities for the colonized people were very limited. Hence the ASEAN Ageing Survey found that only 7 per cent of males aged 60 years and over and 2 per cent of females had any secondary or post-secondary education, while only 44 per cent of males and 14 per cent of females were literate (Chen and Jones 1988: 32-3). The levels of education and literacy decrease consistently with increased age and are substantially lower in rural than in urban areas. Sigit (1988) found in his Java survey that 42 per cent of urban elderly persons (21.3 per cent of males and 62.1 per cent of females) were illiterate, as were 55.1 per cent of their rural counterparts (38.2 per cent of males and 69.9 per cent of females). Consequently, during the recent period of rapid economic expansion, older workers have found it especially difficult to compete in the formal sector of the labour market because they are generally less well educated than the younger generations which reached school-going age during the postwar expansion of education. This had resulted in much higher proportions proceeding on to high school and tertiary education than had been the case with the cohorts moving into these ages in the 1920s, 1930s and 1940s. Hence older people are disproportionately under-represented among workers with pension coverage.

With respect to government support in Indonesia, there are three major 'pay as you go' pension schemes. Table 6.5 shows that there are 4.21

TABLE 6.6 Growth of Membership of ASTEK, Indonesia, 1978–1993

	No. of enterprises	No. of workers
1978	3,263	918,589
1979	3,972	1,141,787
1980	5,243	1,252,805
1981	6,774	1,340,990
1982	7,945	1,453,990
1983	8,926	1,760,181
1984	12,246	2,058,372
1985	14,783	2,352,358
1986	16,793	2,606,096
1987	18,596	3,005,822
1988	21,690	3,334,864
1989	25,558	3,602,280
1990	29,548	3,929,141
1991	33,536	4,468,984
1992	38,462	5,279,760
1993	45,294	5,779,632

Source: ASTEK (unpublished data).

million government workers covered by pension plans. There is also a programme for the armed forces, but data are not available on its coverage. The government has begun a 'pay as you go' social security scheme (ASTEK) which people belonging to large and medium-sized enterprises are compelled to join. Table 6.6 shows that coverage in this programme had almost reached 6 million workers in 1993.

Hence at best Indonesian pension schemes cover only around 10 million of Indonesia's more than 70 million workers. One significant factor here is that more than half of Indonesia's workers are employed in the *informal sector*: that sector of the economy which does not register with official agencies, does not pay taxation, and involves a vast multiplicity of small-scale enterprises, often family-based. It is very difficult to develop a formal pension scheme that incorporates this group. Moreover, pensions in Indonesia where they are received are rarely sufficient to meet the needs of the full living costs of elderly persons (Jones 1993), and where they are available they are predominantly provided to males. In the 1985 ASEAN survey, 13 per cent of elderly male respondents in Indonesia indicated that their main source of income was a pension and 16 per cent received some income from this source. The equivalent proportions for elderly women were 4 and 5 per cent respectively (Sigit 1988). Ihromi (1989) reported that some 11.5 per cent of Indonesia's current workforce (involving some 20 per cent of the total population) are presently covered by pension or old-age assurance provisions. These are almost exclusively

civil servants, army personnel, and city-based employees of large private-sector organizations, especially industrial concerns.

Hence it is clear that the current generation of elderly people in Indonesia are highly dependent upon the family and local community for support (Ihromi 1989; Rudkin 1994b). There is every indication that, if the situation of the elderly in Indonesia has not deteriorated over recent decades, then at the very least they have not shared proportionately in the increased prosperity that has occurred in the nation since 1975.

CONCLUSION

It is clear that in Indonesia, as in most LDCs, there is an almost total reliance upon the family and, to a lesser extent, the local community to care for the elderly. Chen and Jones have pointed out that Indonesian policy-makers,

whether of necessity or from philosophical conviction, seek to maintain the existing systems of family care and concern for the elderly. The family is seen as ultimately responsible for its elderly dependents, and institutionalization to be used only as a last resort. The aim is to obtain as much community participation as possible. This philosophy is reflected in the kinds of income maintenance, health care, recreational programmes and publicly funded institutional care available to the elderly. Governments provide limited special services for particular groups of the aged, and rely on private and charitable groups to assist in providing for the needy. Social security programmes are typically limited to employed individuals with complementary special welfare programmes for the impoverished and the impaired. (Chen and Jones 1988: 79)

Nevertheless, it is clear that there are changes occurring in intergenerational relationships in Indonesia, and that Heisel's (1985) conclusion, made more generally for LDCs, is highly relevant to Indonesia:

values of the traditional family system are still very important and the aged command respect and attention from the young members of the family, who have the responsibility for caring for their elders. However, recent economic and social changes, particularly migration, have produced a decline in the traditional system of assigning responsibility in the family and in its capacity to cope with some of the fundamental needs of its aged members. (Heisel 1985: 24)

Unfortunately, our knowledge of changing patterns of intergenerational relations and their implications for the well-being of the elderly in Indonesia remains limited. There is a need for more investigations of these issues at the community level using intensive Caldwellian techniques. Moreover, there have been a number of large surveys³ of Indonesian

families since 1985 which could productively be disaggregated to investigate the situation of different generations and the relationships between them. Such a perspective is currently missing. Another major research gap relates to the gender dimension in changing intergenerational relationships in Indonesia. The situation of older women in Indonesia is little understood (Djohan 1996).

Projections based on the 1990 census see the Indonesian population aged 65 years and over increasing by 48.6 per cent between 1990 and 2000 to reach 9.5 million and by 112.2 per cent between 1990 and 2010 when it will number 13.6 million. Depending on the fertility assumptions adopted, by 2010 the aged will make up between 5.77 and 5.92 per cent of the total population. By 2020 the Indonesian population aged 65 years and over is projected to be 21.2 million, making up 7.8 per cent of the total population.

In Indonesia, the rapid growth of population is placing great strain on the provision of all types of public services and utilities. In such a situation it is difficult to persuade city, regional, and national governments to move into what are largely new areas of spending to provide specialized services for the aged. The need for such services, especially those that mesh with, and support and encourage, family-based systems, is however considerable.

There are some signs that official attitudes towards the elderly in Indonesia are beginning to change from those reflected in the quotation above from Chen and Jones. In 1993 a cross-ministry committee was set up by the Indonesian government to develop and co-ordinate activities to enhance the well-being of the elderly in Indonesia. In 1994 a plan was produced which was intended as a blueprint for improving the situation of the elderly in Indonesia (Kantor Menteri Ko-ordinator 1994). The National Ministry of Population has included the enhancement of life conditions of Indonesia's elderly in its *Keluarga Sejahtera* (Prosperous Family) Program (Kantor Menteri Negara Kependudukan 1995). While it remains to be seen whether these initiatives are translated into actions which improve the situation of Indonesia's elderly, it does represent a significant shift in official attitudes towards the elderly. It is clear that the insights provided by Caldwell's theoretical contributions have assisted greatly in informing the research on Indonesia's elderly by local and international scholars. The indications that the reversal of net intergenerational wealth flows associated with the fertility transition may result in a reduction in the traditional support available to the elderly has been important in raising awareness in Indonesia that ageing is not a non-issue, so that policy-makers and planners are beginning to address it. Caldwell's stressing of the interrelationship of demographic processes, and especially their two-way interrelationships with wider social and economic processes, is an important and significant contribution, not only to demography but

to social science in general. His work will continue to guide, inform, and illuminate the work of scholars not just in fertility and mortality studies, but in the wider discipline of demography and population studies as a whole.

NOTES

1. This project has produced a series of research reports dealing with the status of the elderly in a number of Asian countries (the Philippines, Singapore, Thailand, and Taiwan). Examples of these reports that are of relevance to the present study include Mehta *et al.* (1992); Domingo *et al.* (1993); Lee *et al.* (1993); Williams *et al.* (1994).
2. ESCAP began a project on 'Emerging Issues of the Ageing of Population in Selected ESCAP Countries' in 1986 and a number of publications followed, including Arshat *et al.* (1989) and Choe (1989).
3. These include Bureau of Statistics Surveys such as the 1994 SUSENAS (National Socio-Economic Survey), 1995 SUPAS (Intercensal Survey), the various rounds of the Indonesian Demographic Health Survey (IDHS), and the Indonesian Family Life Survey.

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PART III

The Place of Culture in
the Explanation of
Demographic Transition

The Proper Role of Culture in Demographic Explanation

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THE PROBLEM OF CULTURE

The problem of culture—lamented by some demographers, championed by others, and until recently ignored by most—just will not go away. The issue of culture goes to the heart of the explanatory problems faced in demographic research. Indeed, the demographer's quandary can serve as a model of the problem faced by all who attempt to explain social behaviour.

The problem can be put in the following terms: what should a satisfactory explanation of demographic behaviour look like? For most demographers, the answer to this question—if only implicitly—is a mathematical equation, in which the demographic behaviour in question (fertility, age at marriage, etc.) is the left-hand term (i.e. the dependent variable) and the factors that influence that behaviour (education, occupation, etc.) are the right-hand term (i.e. the set of independent variables). Such models are typically used these days at the micro level to model (i.e. explain) the demographic behaviour of individuals. However, forms of these models are also used for larger aggregates, that is, for identifiable geographical or other units. Of course, there are many ways in which sophisticated demographers may complicate such models, but this is what they boil down to.

What implications does the concept of culture have for such understandings of the way the world works? To begin by oversimplifying drastically, there are two ways in which those engaged in making sense of demographic behaviour can cope with culture. First, they can treat it as they treat everything else judged to be relevant to their task: they can try to reduce it to terms that can be placed on the right-hand side of their equation. This means cutting culture down to size, conceiving of culture as theoretically divisible into a set of measurable entities, and going out and measuring them. There are of course all sorts of difficulties faced in such a task. Proper borders must be determined, with people assigned to single cultures, and, most of all, out of the morass of possible elements

I would like to thank Fran Goldscheider, Susan Greenhalgh, and Gene Hammel for their comments on an earlier version of this chapter, and NSF grant SBR-9515424.

a set of measurable variables must be extracted by a leap of reification. Indeed, those who engage in such a task—like those who engage in standard demographic analysis without thought of culture—have been open to the charge of deciding what to employ in their explanation based more on what is easily available in existing data sources than on what is theoretically relevant to the task at hand.

Culture employed in the above fashion enriches the now dominant paradigm of demographic research without undermining it. Add variables and mix. Yet, the culture concept has other potential implications for understanding demographic behaviour, and these implications are much less amenable to the existing practices of demographers. Putting it boldly, we might say that demographic research today is rooted in the belief that people everywhere are basically the same. To use the popular computing metaphor dear to cognitive scientists, this might be phrased as: people everywhere process information in the same way. Given the same input of variables of the kind demographers measure, people's output—their demographic behaviour—will be the same. Understanding diversity of demographic behaviour around the world, in this model, simply means examining the constellation of measurable variables present in different areas.

What if culture cannot be divided into such neat chunks? What if there are significant dimensions of culture that cannot be cut up and measured? And what if people are not everywhere the same, as many cultural anthropologists would argue?¹ In the face of such questions, demographers have typically responded in one of three ways: (1) they ignore the question and act as if people's behaviour can be understood by the tried and true demographic methods; (2) they reject the notion that there is any such dimension that cannot be operationalized in standard positivist fashion; (3) they admit the possibility of some validity to the critique, but throw up their hands and admit that demographers can only deal with 'variables' that are measurable and that fit into equation-like models. In this view there is no point fretting about what you cannot handle. The logical result of this way of thinking is to treat culture as an 'error' term in your model.

The problem of culture bears closely on the problem of rationality. While rational action theory (RAT) has been fiercely debated in many social science disciplines, it has scarcely risen to the level of consciousness for most demographers. This is not because it is irrelevant, but more likely because the discipline (if demography can be so dubbed) rests so firmly on the assumption of the rational actor. This is in many ways comforting, for the assumption enables demographic research to go forth and justifies the sophisticated survey and statistical techniques employed by demography, thereby bolstering demographers' claims to expertise. Sheila Johansson (1990: 54) refers to this as the 'intellectual ascendancy

of neo-classical economic theory' in demography, which, she argues, 'is linked to eradicating the belief that cultural influences on human behaviour do matter, and that it is scientifically legitimate to study them'.

Indeed, any attempt to question the assumption of rationality is apt to be rebuffed as a veiled assault on the mental faculties of people who are different from us. Are we claiming that, while we act according to rational calculations, other people (particularly those in Third World settings) are not? Along these lines, Warren Robinson has recently taken to task those demographers who failed to predict the onset of fertility decline in Kenya. He admonishes those involved in demographic policy in other African countries to pay no heed to those who promulgate cultural explanations for African demographic behaviour: 'They should not be obsessed with cultural "barriers" to demographic change' (Robinson 1992: 457). In particular, he decries the sin of earlier analysts in 'over-emphasizing the colourful anthropological uniqueness of Kenyan culture'. His clear implication is that we should view East Africans as essentially no different from us: when economic conditions change, they will respond accordingly. What is the anthropologist to do?

RATIONALITY AND THE PROBLEM OF CULTURE

The philosophical literature on the problem of rationality is immense, and the social scientific literature likewise daunting. This chapter shamelessly skirts the task of engaging this literature in favour of raising some issues at stake in considering the implications of the culture concept for demographic explanation.

The question might be posed in these terms: can we understand demographic behaviour as people's rational response to a given set of factors (social, environmental, etc.) that they face? In a simple rational choice model, the individual, confronted by various forces, selects behaviour that will maximize his or her well-being. An objection raised to such a model, though, is that people's choices are clearly influenced by societal arrangements, and these themselves can be seen as more or less adaptive to environmental conditions. For example, in a state concerned about declining fertility, it might be 'rational' in some sense for power-holders to promulgate programmes that offer a large financial bonus for couples to bear children. In such a context, it would then be 'rational' for individuals to choose to bear more children than they might do otherwise.

Cultural Determinism

The problem of rationality and culture can be dealt with in essentially two ways in demographic research. Recognition of the role of culture

either can be seen to undermine the basic paradigm of rationality, or it can be viewed as simply adding to the list of forces on which individuals act rationally.

The more radical proposition can be seen in the work of anthropologist Vernon Dorjahn on Temne (West African) fertility. Dorjahn argues that 'people are not always rational in their fertility behaviour'. He goes on to state that we must 'appreciate the possibility that a portion of "fertility decisions" are accidental, emotional, and non-rational in relation to cultural factors relevant to such decision-making' (Dorjahn 1986: 328). Although this argument is a bit cryptic, the implication is that people may behave in ways that are not in what an outsider would take to be their self-interest, following instead preferences dictated for them by their culture.

Anthropologists Robert LeVine and Susan Scrimshaw (1983: 667) have likewise distinguished between the realm of the economic—ruled presumably by rational calculation—and the realm of the cultural, where behaviour is not constrained by rational calculus. They criticize the way demographers, in trying to explain fertility behaviour, invoke cultural factors, and they argue that such demographers mistakenly treat cultural factors as 'discrete rules or beliefs'. By contrast, anthropologists—at least those of the new school—'see culture as an organized system of shared meanings, often more pervasive than explicit, a set of basic assumptions and images that *generates* rules and beliefs, but is not reducible to them'. In their model, which appropriately cites Geertz, people in 'folk cultures' live in a world whose reality is of their own construction. As LeVine and Scrimshaw argue, 'This unreflective fusion of fact and value, rejected by Western positivism, is nevertheless the basis of folk cultures.' The methodological lesson for demographic research that they draw is that 'no rule or belief can be interpreted out of the context that gives it meaning, and that is uncovered by ethnographic work'. From this they draw the following conclusion:

The fertility pattern that characterizes a population . . . has a cultural rationale based on certain assumptions, some 'rational' (reflecting the actual environment) and others 'irrational' (reflecting normative traditions), but all accepted by the population to be principles of common sense. (LeVine and Scrimshaw 1983: 669)

Here what had previously been said to characterize folk cultures is extended to all populations. People's behaviour cannot be understood outside an essentially non-rational, cultural context; the explanatory solution is not a matter of adding variables to an equation.

Among the demographers who have addressed these issues, Ron Lesthaeghe has been especially influential. Lesthaeghe's approach, like that of virtually all demographers who have wrestled with these questions, reflects the second solution mentioned above to the problem of taking culture into account in explaining demographic behaviour. He has been

concerned to cut culture down to size and to find ways of measuring it, thus enabling him and his colleagues to continue doing demographic research within the boundaries of established methods.

At the same time, Lesthaeghe takes up a kind of evolutionary position that has become unfashionable in the literature, though its influence undoubtedly continues to be widespread. This is the notion, associated both with nineteenth-century evolutionists and twentieth-century modernization theorists, that pre-modern societies were ruled by custom and tradition, while the hallmark of modern society is the rise of the principle of individual rationality as the basis for social action.

Hence Lesthaeghe describes the fertility decline as 'in essence part of a broader emancipation process':

the demographic regulatory mechanisms, upheld by the accompanying communal or family authority and exchange patterns, give way to the principle of individual freedom of choice, thereby allowing an extension of the domain of economic rationality to the phenomenon of reproduction. (Lesthaeghe 1983: 411)

This approach, it should be noted, is not one that simply contrasts Western (rational) and non-Western (non-rational) societies, for Lesthaeghe has applied it to the decline of fertility in Europe itself, focusing especially on the role of religion and the forces of secularization.

Yet much of Lesthaeghe's recent work in tackling the cultural dimension in demographic explanation has been devoted to the task of operationalization of cultural variables in a way congenial to accepted demographic methodology. For instance, Lesthaeghe has attempted to operationalize the concept of secularization by introducing in one study 'two cultural variables', one referring to the historical influence of Protestantism and the other to the historical tolerance for cohabitation and illegitimacy (Lesthaeghe 1991: 15). In concluding that 'the recent demographic changes [in Western Europe] are a response to common cultural and economic factors' (Lesthaeghe 1991: 23), he clearly embraces an approach that treats culture as another set of variables that are grist for the demographer's mill.

Does such a model presuppose rationality? Lesthaeghe himself appears at times ambiguous on this point. In trying to explain the timing and distribution of demographic change in Europe, he tells us that 'there are two histories to write when analyzing the demographic response, namely the history of *material conditions* and that of *ideology*. Both are evidently connected.' He concludes: 'The purely economic model, either formulated at the micro level (rationality in households) or at the macro level (impact of economic structural transformation) is necessary, but *far* from sufficient' (Lesthaeghe 1991: 274). Here Lesthaeghe appears to be contrasting the rationality operating in the link between material conditions and demographic behaviour with the lack of rationality operating where ideological (or cultural) factors are concerned.

Use of culture as an explanatory factor outside the realm of rational calculation has made something of a comeback, after being discredited as ethnocentric, if not racist, in its earlier evolutionary incarnation. Nor is this simply a development in Western demography. Wu and Jia (1991), for example, in a recent attempt to explain the fertility decline in China, point to the central role played by Chinese culture. They attribute the fertility decline in ethnic Chinese populations outside China to the fact that 'the neighbouring regions usually have similar culture and thus similar fertility behaviour'. They define culture—something few demographers bother to do—as 'the total sum of the material and mental wealth as well as of social systems which have been preserved for thousands of years'. In the Chinese case this includes the importance of the collectivity over the individual, industriousness, emphasis on education, and a lack of religious fanaticism (Wu and Jia 1991: 3–6).

Caldwell, Rationality, and Culture

As the most influential demographic champion of bringing anthropological perspectives into the demographic research community, Jack Caldwell merits special attention here. In his work not only on fertility behaviour, but also on health-related practices (especially his studies of African sexuality and AIDS), Caldwell has urged the demographic community to go beyond typical survey methods and to expand research horizons beyond the standard demographic, sociological, and economic variables measured in such surveys. What makes his approach so intriguing, in the context of the topic before us, is how difficult it is to pin down where he stands on the question of culture, rationality, and demographic behaviour.

Let me take here only one aspect of his work—albeit an extremely influential one—the theory of wealth flows (see e.g. Caldwell 1976, 1977, 1982). There is no better example of how Caldwell seems to function as a Rorschach test, being interpreted in very different ways by different scholars. No less astute an analyst than George Alter recently referred to Caldwell's wealth flows theory as 'fundamentally a cultural model, not an economic one', pointing out the central role played in it by '“Westernization,” the spread of European concepts of family relationships and life-styles' (Alter 1992: 24). Yet what are we to make of the fact that Caldwell (1981: 5) argues that 'fertility in all societies is rational'? And Caldwell argues that societies can be divided into two types, depending on the direction of wealth flows: one in which economic rationality dictates maximizing the number of children, and one in which economic rationality dictates having no children.²

The complication here is introduced by the fact that, in Caldwell's wealth-flows model, although fertility follows rational calculation at the level of individuals, the cultural and social arrangements that feed into

their calculations are outside rational calculus. We thus end up by preserving the model of the rational actor at the same time as we undermine the value of a rational-actor approach to demographic behaviour.

In pursuing the theoretical implications of these issues, let us turn to recent work in anthropology and history. We first look at some of the recent theoretical work done by anthropologists on this topic of culture, rationality, and demographic behaviour.

Anthropologists, Culture, and Rationality

Anthropologists have played a somewhat awkward role in the recent debate over culture in demography. On the one hand, culture is the anthropologist's calling card, a concept we use to stake out our professional turf. Demographers who dare to invoke culture often feel compelled to acknowledge the superior expertise of the anthropologist and pay homage at the anthropological temple. Yet, ironically, a number of the anthropologists who have been most influential in demographic research have been those least comfortable with this role, questioning the status that culture has come to occupy as an alternative to more traditional forms of demographic explanation.³

To shed some light on the contribution anthropologists have recently made to this debate, I would like to consider very briefly the positions adopted by a few of the anthropologists whose work is most likely to appear on the demographer's bookshelf: Penn Handwerker, Philip Kreager, Caroline Bledsoe, Gene Hammel, and Susan Greenhalgh. What they all share is a rejection of the just-another-laundry-list-of-variables approach to dealing with culture in demographic explanation. Their perspectives derive from a more sophisticated theory of culture than is common among non-anthropological demographers, and they raise some troubling issues for the future course of demographic research which I would like to address.

The add-culture-and-mix approach to demographic explanation comes under direct attack from Penn Handwerker, who has worked on fertility in both West Africa and the Caribbean. The fertility decline, Handwerker (1986: 10) stresses, 'reflects a *cultural* transformation'. Yet, he adds, culture cannot be seen as a set of variables 'other than economic, political, social, religious, and psychological', for '*culture is not distinct from these phenomena*'. For Handwerker, culture is a set of mental constructs that make sense of reality and underlie values: 'Culture thus refers to the content and structural specifications that people use to define economic, political, social, religious, and psychological factors' (Handwerker 1986: 10–11).

If this is so, it would seem to be an argument for cultural determinism, yet in Handwerker's own explanations one gets a clear sense that economic factors lie at the heart of the matter. Take his paradigm for explaining fertility decline:

My argument is that fertility transition is brought about by (1) changes in the moral economy of reproduction and parent-child relationships, which change because (2) the expected wealth flows from children and the social relationships they create is [sic] negative, which occurs when (3) the relative importance of personal relationships in accessing key resources declines, which declines because (4) changes in opportunity structure are accompanied by the ability to make effective use of an independent criterion—most commonly but not exclusively, formal schooling and skill training—to create and maintain acceptable standards of income, which occurs primarily when (5) competitive non-agricultural economic opportunities proliferate. (Handwerker 1986: 16)

Upon inspection, this argument takes the form of traditional economic determinism. Indeed, its first two elements—change in intergenerational wealth flows leading to reduction in fertility—are borrowed from Caldwell, while the causal path that precedes them lacks the 'cultural' elements found in Caldwell's work.

What, then, is the relationship between Handwerker's view of culture as defining reality and underlying values, and his explanation of fertility decline? The form of the argument resembles quite closely a Marxian perspective, one in which the cultural can be relegated to the superstructure. On the face of it, this does not accord very well with the notion that it is culture that defines economic relations and economic reality.

A number of influential anthropologists have recently taken a different tack in approaching the role of culture in demographic explanation. Their contention has been that demographers who champion culture as a significant explanatory factor have got hold of a hopelessly out-of-date concept of culture, left over from the nineteenth century and perpetuated through the middle years of the twentieth century by such efforts as George Murdock's Human Relations Area Files 'holocultural' approach to cross-cultural study.

The approach to culture that these anthropologists attack is one that views culture as a laundry list of traits. This, in turn, is linked to the view that people are everywhere products of their culture—in the extreme view, slaves to custom. Hence, in the view under attack, culture can be conceived as a series of beliefs, social institutions, and behaviours that are morally sanctioned and into which people in a culture are fully socialized. People's view of the world around them, both their definition of reality and their judgement of what is good and what bad, are thus given to them by the culture into which they are born.

Recent anthropological critics of demographers' increasing invocation of culture have pointed out that this view of culture is considered outdated among most theoretically sophisticated anthropologists, and outdated in ways that have serious implications for the use of culture in demographic explanation. The key word in this revisionism is 'agency', the emphasis on the degree of autonomy individuals have in manipulating culturally produced norms and beliefs for their own ends.

Caroline Bledsoe, for example, writing with Allan Hill, tells us that data from their research in the Gambia are 'casting doubt on the notion that local people are slaves to traditional norms of health and reproductive practice' (Bledsoe and Hill 1993: 3). Instead, the following advice is offered:

Rather than focusing exclusively on what the rules are, and to whom they apply, we can ask how people *select* among alternative rules to justify their behaviour and use them to persuade others that they need to behave in certain ways. In this conception, rules are perceived less as rigidly binding prescriptions for conduct than as resources. (Bledsoe and Hill 1993: 9)

Bledsoe earlier raised this theoretical point in her work on the Mende (of Sierra Leone), stressing the ability of both adults and children to redefine their kinship obligations to suit their own goals. She concludes that 'cultural labels such as kinship and fosterage are best viewed not as relationships that compel future support, but as idioms for making demands or asserting claims with respect to children'. As a result, 'rather than speaking of rights in children, the traditional anthropological phraseology, the better way to characterize adults' relationships to children is "claims", which must be created as well as activated' (Bledsoe 1990: 82, 96).

Philip Kreager provides another variant of this perspective in identifying the nub of culture in 'the application of criteria of right and wrong'. He argues that cultural systems, properly viewed, do not lay down any absolute code of conduct but, rather, entail 'an endless process of negotiation' (Kreager 1985: 136).

In an article that attracted a considerable amount of demographic attention, Gene Hammel (1990) added to this cultural revisionism, blasting what he took to be the purely 'nominalistic' and static use made by demographers of culture as an explanatory factor. Putting the matter in his usual felicitous style, Hammel contrasted two ways of conceptualizing culture: 'culture for the people' and 'culture by the people' (1990: 466). In the traditional model of culture for the people, behaviour is viewed as the product of their culture, and hence understanding why people act as they do is simply a matter of identifying the cultural context into which they were born. By contrast, a conception of 'culture by the people' emphasizes individual agency. Culture is viewed as providing a stock of symbols invested with moral weight that individuals manipulate; this manipulation in turn alters the stock of symbols and hence alters culture.

Susan Greenhalgh has likewise taken up the attack on the way demographers have come to use the culture concept. She argues that 'culture does not belong on the list of determinants' (Greenhalgh 1988: 668). She criticizes demographic studies of fertility in peasant societies, castigating demographers for attributing the gender ideologies found there to 'residues of traditional culture'. This she dismisses as the product of 'an older, ahistorical conception of culture as something "out there" or

external to its bearers'. She asserts that such a concept of culture has been replaced in the social sciences 'by one that sees cultural values as constructions of human agents acting in historical time' (Greenhalgh and Li 1995: 610). Echoing Bledsoe, she argues that 'culture is like a spice rack of ideas and practices from which people choose depending on the menu of opportunities and constraints posed by their environments'. Although this means, according to Greenhalgh, that culture is 'highly variable' and 'not easily caught because it is always in process', she argues that it is none the less of critical importance, playing 'a crucial role in demographic behaviour' (Greenhalgh 1988: 668).

Ironically, perhaps, both Hammel (1995) and Greenhalgh (and I would add myself—Kertzer 1995; Kertzer and Hogan 1989—to the list) have recently expressed doubts about the movement in some sections of the demographic community to despair of the value of economic variables in explaining demographic behaviour, and to embrace culture as the basis of an alternative explanatory paradigm. Greenhalgh criticizes demographers (the example she gives is Cleland and Wilson's influential 1987 article) who, disappointed by the showing of demographic transition theory, adopt a cultural or diffusionist perspective and, in so doing, seem to embrace an 'either/or' position, 'with cultural forces explaining everything, socio-economic factors virtually nothing' (Greenhalgh 1995: 16). Instead, she calls for a 'culture and political economy perspective'. In this effort, 'the real challenge is to construct whole demographies that illuminate the mutually constitutive relations between culture and political economy, and the implication of these relations for reproductive actors' (Greenhalgh 1995: 20, 17). Hammel and colleagues (Galloway *et al.* 1994) go further, employing historical Prussian data to cast doubt on the basic findings of the Princeton European Fertility Project. They argue that economic changes did indeed play a central role in Europe's fertility decline.

What is hinted at here is a third way of approaching the problem of the link between culture and demographic behaviour. The standard demographic approach—what I earlier labelled the first approach—whereby culture is operationalized as a list of traits, suitable for entry into the right side of a regression equation, has clearly been the object of considerable criticism by the anthropologists interested in demographic explanation. On the other hand, the second approach—an interpretivist view of culture as understandable only from inside the culture—is of limited appeal to those anthropologists who seek cross-culturally viable generalizations. (Indeed, from a strict interpretivist perspective, there can be no explanation of behaviour.) And all those anthropologists cited above do indeed seek explanation and not simply description.

In considering what such a new approach might look like, along with some of the limitations in the perspectives which anthropologists have offered thus far, I would like to turn to recent work on European histor-

ical demography. In particular, I would like to take a moment to consider the implications of a subject on which I have recently been doing some work, the large-scale abandonment of infants in the European past.

EUROPEAN HISTORY AND DEMOGRAPHIC EXPLANATION

Although most attention in the debate over the role of culture in explaining demographic behaviour has centred on fertility, the issues are just as central to the study of infant mortality. Levels of infant mortality are related not simply to physical conditions, which are outside immediate social control, but also to behaviour, which is clearly affected by a variety of cultural forces, such as beliefs in the value of children, opinions about the kinds of maternal attention babies merit, and understandings of how to respond to various symptoms of ill health.

The issue of the role of culture in explaining infant mortality levels in Europe in the past came to the fore two decades ago with the work of Edward Shorter (1977). Shorter rejected the predominant view that high levels of infant mortality in Europe in past centuries were attributable simply to public health and economic and nutritional conditions of the time. Rather, he argued, many infants died through lack of sufficient concern for their well-being shown by their parents. Studies revealing the huge magnitude of the putting-out system for newborn babies in Paris in the past (e.g. Sussman 1982), and their consequent high mortality, lent support to this argument. High rates of infant mortality in those parts of eighteenth- and nineteenth-century Germany where mothers did not breastfeed their babies offered further evidence to bolster Shorter's position (Knodel 1988).

In recent years, the centre of this historical debate has shifted to the terrain of the large-scale abandonment of newborn babies in Europe. With the publication of John Boswell's (1988) mistitled book, *The Kindness of Strangers*, the huge scale of infant abandonment in Europe from the time of the Roman Empire came to the attention of the scholarly world.⁴ A spate of recent studies has documented the subsequent rise, beginning around the fourteenth century, of an institutionalized system of infant abandonment, complete with wheels for anonymous abandonment and foundling homes overflowing with starving infants (Fuchs 1984; Ransel 1988; Sherwood 1988; Hunecke 1989; Robins 1989; Gavitt 1990; Kertzer 1993).

Shorter was roughly criticized for suggesting that 'mother love' was somehow historically contingent. Counter-attacking, critics argued that if children died it could only have been despite parents' (especially mothers') best efforts to nurture them. Similarly, in the case of institutionalized abandonment, the question revolves around the interpretation of parents'

motives for leaving their newborns at foundling homes, where their likelihood of survival was greatly reduced.

In a manner I see as parallel to the general unwillingness to credit Shorter's argument, a number of scholars argue that infant abandonment in the European past provides no evidence of the culturally contingent nature of the devotion of parent to child. Etienne and Francine van de Walle, for example, write of the 'self-delusion of parents who believed that their children would have a better chance in life if they were entrusted to public charity and community welfare institutions, since we know that very few abandoned children survived to adulthood'. Speaking of eighteenth-century France, where infant abandonment had reached very high levels, they argue that 'the public was hardly aware of the very large mortality of abandoned children. There was a conspiracy of silence to hide this massacre of the innocents . . .' (van de Walle and van de Walle 1990: 155).

The van de Walles take issue with Rachel Fuchs's interpretation of French infant abandonment in the eighteenth and early nineteenth century. Fuchs (1984: 25) had argued that 'Children, whether legitimate or natural, were secondary to the economic and social survival of working-class mothers. . . . Impoverished mothers could not afford to expend emotional or physical time and energy on nurturing their offspring.'

There are many points of interest in this debate, but in the context of our topic here, let us look in particular at the implications of the van de Walles' rejoinder to Fuchs's claim. They respond:

If so, European working-class parents would form a singular exception. One would have to explain why children were not valuable and valued, and well worth the emotional expenditure, as they are among poor people over the world today. Were wealth flows then flowing uniquely from parents to their children in Europe? (van de Walle and van de Walle 1990: 156)

What is striking about the terms of this debate between Fuchs and the van de Walles is that both rest their argument on economics and individual rationality. Fuchs employs economic language—referring to what poor parents could 'afford'—while the van de Walles invoke Caldwell's wealth flows theory. In this, they apparently presume that a lack of full concern for the well-being of one's newborn could make sense only if there were no lifetime economic gain to be made from the children.

It is curious, though, that, while making the economic rationality argument, the van de Walles also emphasize the fact that French parents who abandoned their newborns could have done so only if they believed that there was a foundling home system in which the infants would do well. Indeed, beneath their economic argument lie strong indications of a kind of biological-psychological thesis: parents everywhere want the best for their children, an altruistic (or, alternatively, socio-biological) tenet at odds with a strict economic interpretation.

In this, the van de Walles echo not only the critics of Shorter, but also those who have attacked the recent work of Nancy Scheper-Hughes (1992).⁵ Scheper-Hughes, an American anthropologist, argued that 'mother love' is not a universal aspect of humanity, but is culturally variable. She movingly describes life in a north-eastern Brazilian shanty-town, in which mothers fail to nurture some of their small children, dooming them to an early death.

Like Fuchs, though, Scheper-Hughes explains this behaviour as ultimately of economic (or, more precisely, political economic) origin. The invention of mother love, she tells us, is linked to 'the rise of the modern, bourgeois, nuclear family', and is, in particular, a product of the demographic transition. Under conditions of high mortality and high fertility, the reproductive strategy that is most adaptive is 'to give birth to many children and, on the expectation that only a few will survive infancy, to invest selectively in those considered the "best bets" for survival' (Scheper-Hughes 1992: 401–2).

Both the debate surrounding the interpretation of infant abandonment in the European past and that surrounding the question of mother love in those parts of the world that today have high infant mortality can help us in our efforts to rethink the role of culture, economics, and rationality in explaining demographic behaviour. The issues raised by the two debates are essentially similar, and what I would like to do very briefly is revisit the European infant abandonment issue in order to reflect back on its theoretical implications for our topic.

The volume of infant abandonment in Europe in the eighteenth and nineteenth centuries was huge: in mid-nineteenth-century Italy alone, 37,000 babies per year were left to the foundling system. Of these, 5,000 per year were left at the Milan foundling home alone and another 2,300 at Florence's foundling home. In Paris in the 1820s, over 5,200 babies per year were abandoned, while by mid-century over 9,000 were abandoned in Vienna each year and over 15,000 in St Petersburg.⁶

This is not the place to go into the geography of infant abandonment in Europe. For the sake of brevity, and to focus simply on the theoretical issues at hand, let me look quickly at abandonment in two Italian cities: Bologna and Milan.

In Bologna, by the late eighteenth century officials had forbidden married parents to leave their newborns at the foundling home (significantly named the 'Bastardini'); the foundling home was to be employed only for children born to unwed women, and a system of surveillance was installed to ensure that this was the case. On the other hand, unwed mothers were *required* to abandon their babies to the foundling home; if necessary, the force of the police was employed to take their babies from them. This was based on a variety of motives: (1) a concern for protecting the honour of the families involved; (2) Church belief that allowing

unwed parents to raise children would give rise to 'public scandal', undermining morality in general and the family in particular; and (3) a concern that unwed women who gave birth without official surveillance might be tempted to commit infanticide (a sin as well as a crime, for such a baby might die unbaptized). Babies abandoned at the Bologna foundling home amounted to about 12 per cent of births in the city in the first half of the nineteenth century, although the figure is misleading since many rural unwed women came to the city in the last stages of pregnancy to give birth.

What does the Bologna situation tell us of the role of culture, economics, and rationality in explaining demographic behaviour? I can only hint at a line of reasoning here, which is developed more fully elsewhere (Kertzer 1993). One factor that clearly forces itself on our attention is political power: unwed women abandoned babies in part because they were forced to by the state and the Church, and the subsequent system for handling the mass of abandoned babies—with its terrifying levels of infant mortality—was likewise partly the product of political–Church ideology and action. On the other hand, the system was tied to both a particular kind of social organization and, more generally, a particular culture. It was a society in which there was no provision for adoption and no formalized extended kin system to take care of children whose own unmarried mothers could not or would not care for them. It was a culture in which having a child out of wedlock was regarded as bringing shame not only on the mother but on her parents and siblings as well. Yet, this culture of honour and shame did not simply arise spontaneously among the illiterate masses over the centuries, but was influenced and moulded by the changing ideology of the Church (most notably, efforts linked to the Counter-Reformation begun in the sixteenth century), which progressively stigmatized illegitimacy.

By the nineteenth century, the volume of abandonment of babies in Milan had reached staggering proportions. Over the two and a half centuries from 1659 to 1900, over 343,000 children were left at the Milan foundling home; more than half of these were deposited there in the years 1810–69 alone. And Milan's foundling home was only one of eight in the region of Lombardy. To some extent, this increase reflects a rise in population linked to the growing importance of Milan as a centre for Italy's earliest industrialization. Yet what is most notable about this mass of abandonment for us here is that at its height most babies left at the foundling home were the product of parents who were married, for, unlike Bologna (but as in Florence), Milan officials raised few barriers to the abandonment of children by married couples. From the 1840s to the 1860s, a third of all children born to married parents in Milan were left at the foundling home; a majority of children born to working-class parents were left there.⁷

This takes us right back to Nancy Scheper-Hughes, Edward Shorter, and the debate over mother love.⁸ How are we to interpret the fact that working-class parents in Milan deposited most of their newborns at the foundling home, where they faced mortality rates at least twice as high as those who were kept at home? One solution, that taken by the van de Walles, is to deny that this undermines the existence of mother love, arguing instead that these parents were unaware of the high mortality that abandoned children faced. This is commonly combined with an economic argument, that if married parents left their children at foundling homes they did so because of crushing economic conditions which left them no choice. A second solution mixes these two elements differently, suggesting that the emotional attachment of working-class women to their newborn babies was itself undermined by the parlous (political) economic conditions in which they lived. This mirrors Scheper-Hughes's approach.

I find the van de Walles' explanation unconvincing, for I find it difficult to believe that information on the staggering level of mortality among abandoned babies did not make its way into popular culture. In the foundling homes themselves, where mortality rates were extremely high, those closest to the babies were the wet-nurses employed by the homes. These wet-nurses were themselves from the lower classes (indeed, many were the unwed mothers of babies they had recently abandoned) and, following their service, they returned to their home towns. Moreover, the abandonment system rested heavily on the continual recruitment of external wet-nurses, that is, on lactating women who came to the foundling home to select a baby and then brought it home with them, receiving a monthly payment for the period of the child's care. These women, too, came from the mass of the poorer population. In addition, not only was there, by the nineteenth century, a constant stream of very public denunciations by a variety of public figures of the high mortality rates among foundlings, but these were communicated by parish priests to their parishioners as part of their urgent appeals to recruit women to take in the foundlings.

What of the second claim, that the abandonment of these babies can be explained by economic factors? There are essentially two versions of the economic argument. The first attributes the increase in abandonment of children by married parents to a general immiseration of the population.⁹ The problem here, though, is that there is considerable evidence that the general level of prosperity in Milan actually increased over the first half of the nineteenth century.

A potentially more appealing economic argument holds that it was not the level of material well-being *per se* that triggered abandonment, but rather a change in the nature of women's involvement in the economy. The industrialization of Milan, in this view, meant that women could no

longer combine maternal responsibilities for small children (especially nursing infants) with employment, for they had to work away from the home (i.e. in factories). The problem with this account is that it is not supported by the evidence. The working-class women who were abandoning their babies were not, for the most part, working in factories at all. They were doing piecework at home.¹⁰

ECONOMICS, CULTURE, RATIONALITY, AND ABANDONED BABIES

Where does all this leave us, and what implications does the case of European infant abandonment have for the topic before us: the role of economics, rationality, and culture in demographic explanation?

To explain the large-scale abandonment of babies in nineteenth-century Italy, first of all, we need to take a long historical view. As we have seen, one important element was the evolution of the Church's position with respect to unwed cohabitation and births to unwed parents. This itself cannot be viewed simply as an 'institutional' factor—following a popular scheme of categorization in demographic research—for it had important cultural implications as well. Not least of these was the evolution among the masses of illiterate people of notions of honour and shame attached to the notion of *bastardini* (little bastards).

What of the abandonment of children by married parents? Here I think we have to take both agency and historical contingency into account. The large-scale abandonment of children by married parents was limited to certain areas of Italy in the nineteenth century.¹¹ An explanation of why it took place when and where it did would have to include the following elements: (1) the development of a massive system for anonymous abandonment of newborns, sponsored by municipal, Church, and other authorities, whose existence was by this time designed to relieve unwed women of the 'fruits of their sin'; (2) changes in family organization linked partly to urbanization and industrialization, which meant that the care of small children cut into family income in a way apparent to all; (3) lack of a kinship system that permitted adoption or facilitated the care of small children by kin other than the child's mother; and (4) willingness of local authorities to tolerate (although simultaneously condemning) the abandonment of children born to married couples.

What I am suggesting here is something close to what Susan Greenhalgh (1995: 20) has called a 'culture and political economy perspective'. Culture is viewed not as a list of traits, but rather as a continuously changing process, one intimately interwoven with the changing institutional structure and field of political power. There is an important element of contingency in this approach, and similar economic forces need not lead to

identical demographic outcomes. Early industrialization and urbanization in England did not lead to large-scale infant abandonment, primarily because an institutional structure (underlain by a particular ideology) of foundling homes had not developed.¹² Concepts of honour and shame differed between England and Italy as well, and these too had an impact. Moreover, even if we look at what happened in Milan, it is hard to feel confident about any kind of deterministic argument. Officials in Milan and in Florence permitted the continuation of anonymous abandonment of newborns, and took other action that permitted huge numbers of children born of married parents in the early nineteenth century to be admitted there. Officials in Bologna and many other Italian cities, by contrast, took various measures to ensure that no such children could be abandoned.

All this argues for approaches to demographic explanation that pay serious attention both to history and historical contingency and to political factors that shape behaviour. Culture—in the limited sense of principles that guide our perceptions of reality and principles for evaluating what is desirable and what is undesirable—has an obvious impact on demographic behaviour, but culture in this sense cannot be seen as prior to the political and economic order.

Where does this leave us in the debate between those who argue that demographic behaviour can be explained by employing a rational-actor model and those who champion a 'cultural' approach? The rational actor approach is, I believe, based on a fundamentally flawed paradigm of human behaviour. There is little to recommend any theoretical approach to human behaviour that downplays the role of either the emotional or the symbolic side of human nature.¹³ As for the cultural approach, here the matter is more complicated, for it all depends on just what this is supposed to mean. If the implication is that there is some kind of autonomous cultural realm—operating according to its own independent principles—that ultimately explains demographic behaviour, I think we are on the wrong track. Rather, we should examine a cultural sphere that is interwoven with, both shaping and being shaped by, political and economic institutions, as well as by kinship and other social organizational structures. This was the point of my discussion of European infant abandonment.

People do have some autonomy to make choices: they are not simply 'cultural dopes'. Yet the choices made by some—those in a position of greater power—are more influential than those made by others. And it may be more misleading than helpful to conceive of culture as some kind of menu of choices from which people make selections to further their own interests. People's interests are themselves defined by their culture, as are their means for achieving them. The choices they have to make, in short, are limited culturally and constrained in complicated ways by a variety of political economic and institutional forces.

NOTES

1. Here, of course, the claim is based not on any supposition of biological difference, but rather on the fact that people produced by different cultures are in important ways fundamentally different (Geertz 1973).
2. For Caldwell's more recent views on culture and fertility decline, see Caldwell and Caldwell (1993a,b) and Caldwell *et al.* (1992b).
3. For a recent examination of the development of demographic study in socio-cultural anthropology, see Kertzer and Fricke (1997).
4. For an explanation of this reference to the book's title, see Kertzer (1992).
5. For a taste of the polemics surrounding Scheper-Hughes's thesis on mother love in Brazil, see Nations and Rebhun (1988).
6. More detailed information on the volume of infant abandonment can be found in Kertzer (1993) and Hunecke (1991). Note that the proportion of all births abandoned in Italy in this period ranged, for most regions, from about 2.5 to 5.0%.
7. We owe this insight to the remarkable historical research carried out by Volker Hunecke (1989). There are many complexities to the Milan situation, including the later attempts of parents to reclaim children left at the foundling home, that I cannot go into in this paper. Those interested might see my discussion of Milan in Kertzer (1993: 77–81, *passim*).
8. The gender implications of all this (one never hears of 'father love') are of great interest but are regrettably beyond the scope of this paper.
9. Support for this position can be found in Woolf (1986).
10. Again, Volker Hunecke's (1989) study provides the evidence for this observation. It is worth noting that in Tuscany at this time the large-scale abandonment of newborns by married parents took place in the absence of significant modern industrialization. On Tuscany, see Corsini (1976, 1986).
11. Large-scale abandonment of children by married parents in earlier epochs did take place, but this is beyond my scope here.
12. Though for a brief period in the 18th c. a foundling home was opened in London. It was closed when officials grew alarmed at the large number of babies abandoned there (McClure 1981).
13. Of course, some practitioners of rational choice theory recognize its limits, and if these limits are kept firmly in mind the approach does have useful applications. However, fascination with the approach tends, in practice, to lead even those aware of these limits to proceed as if they did not exist.

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Gender and Demographic Change: *What Do We Know?*

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This chapter reviews what is known about the relationship between gender systems and demographic change. The potential importance of society's gender organization for demographic change (especially for change in fertility and mortality) has been recognized widely only since the early 1980s, when authors such as John Caldwell (1982) and Nancy Folbre (1983) first described how patriarchal family systems act to maintain high fertility. Although research on female employment and fertility stretches back into the early portion of the century, studies explicitly concerned with gender systems and their impact on demographic change are relatively new. Indeed, investigation of this topic is recent enough that we are only beginning to understand how to conduct high-quality research on it. Even less well understood than the impact of gender systems on demographic change is the equally important link between demographic change and shifts in gender relations that result in a more equal balance of power and well-being between women and men. In the interests of encouraging better research, this chapter discusses several reasons for the preliminary state of our knowledge as well as reviewing what we already know.

Before turning to these issues, let us define our terms. By 'gender system', we mean the socially constructed expectations for male and female behaviour that are found (in variable form) in every known human society. A gender system's expectations prescribe a division of labour and responsibilities between women and men and grant different rights and obligations to them. Either intentionally or as a side effect, they also create inequality between the sexes in power, autonomy, and well-being, typically to the disadvantage of females. Although gender systems change over time, many of the expectations that lie at their heart are strongly enforced

This is a November 1996 revision of a paper commissioned in 1995 by the International Union for the Scientific Study of Population (IUSSP) with financial support from the United Nations Population Fund (UNFPA). I thank the IUSSP for allowing this version of the original paper to be printed here. I am grateful to the United Nations Population Fund (UNFPA) for its support of the IUSSP, and to Brigida Garcia and Harriet B. Presser for helpful comments on earlier versions of this paper. Neither the IUSSP nor the UNFPA bears any responsibility for the opinions expressed, which are solely my own.

by the state or community and through informal sanctions between neighbours, kin, and friends. The rules for behaviour that constitute these systems are also inculcated in children from an early age and are thought to form a basis for personality (Rubin 1975).

Although the literature frequently refers to such terms as 'gender roles', 'female empowerment', 'women's autonomy', and 'women's status', the term 'gender system' is preferable because it comprises the entire complex of roles, rights, and statuses that surround being male versus female in a given society or culture. It should be recognized, however, that gender systems have distinct subcomponents. For example, they both prescribe a division of labour (gender roles) and create institutionalized inequality between male and female members of society (gender stratification). Because gender stratification typically involves greater social control of females than of males, the term 'female empowerment' refers to a reduction in one dimension of gender stratification, namely the power dimension. 'Women's autonomy' is also an aspect of this power dimension; it refers to women's freedom to act as they choose, rather than as others would have them act. Thus, one way in which women can be empowered is by gaining greater autonomy. 'Women's status' has a variety of meanings (Mason 1984, 1986), but often refers to such dimensions of gender stratification as control of material resources or command of social honour or prestige.

'Demographic change' can refer to change over time in a population's growth or territorial distribution, or to change in the major components of population growth, especially fertility and mortality. Although there is a small but growing body of literature that discusses the links between gender systems and migration (e.g. Pedraza 1991; Lim 1993; Makinwa-Adebusoye 1993), most writings to date have focused on fertility or mortality. This review consequently deals only with the latter variables. We further restrict our attention to less developed countries, because this is where mortality and fertility tend to be highest and gender inequality most problematic. (Either women are very oppressed compared with men, or female well-being is very low in absolute terms.) Because the largest gains in survival in poor countries occur at young ages, we focus our discussion of mortality on infants and children rather than adults.

An important point made clear by the proximate-determinants schemes devised by Bongaarts (1978, 1982; Bongaarts and Potter, 1983) for fertility and by Mosley and Chen (1984) for child survival is that individual actions can have a strong impact on fertility and mortality. To be sure, both mortality and fertility can be affected powerfully by the actions of governments or other organizations—for example via public health campaigns or public works projects—but also important is how mothers and other family members behave. As is elaborated below, this point raises methodological problems for the study of gender and demographic change.

The next section discusses some inherent difficulties in studying the links between gender and demographic change using the quantitative approaches favoured by demographers. I review these problems in the interests of understanding why we still have much to learn about gender and demographic change—and how we might better go about learning it. Subsequent sections consider what is known about the impact of gender systems on fertility and mortality, respectively; a further section briefly reviews ideas about the impact of demographic change on gender systems. The chapter ends with research and policy recommendations.

PROBLEMS IN UNDERSTANDING GENDER AND DEMOGRAPHIC CHANGE

Although it is tempting to blame our limited knowledge about gender and demographic change on the use of inappropriate methods or theories (e.g. Greenhalgh 1995), it should be recognized that studying the links between gender systems and demographic change is inherently difficult, especially if one adopts the dominant scientific standard in demography, which is quantitative and positivistic, and which therefore requires statistical or experimental proof of causality (an important consideration if policy-makers are to treat the findings seriously: Presser 1994).

The difficulties inherent in studying gender and demographic change are by no means unique to this topic, nor are they insurmountable; but if research is to improve, they need to be recognized. One obstacle to making causal inferences about gender systems and demographic change is the aggregated nature of demographic change. Another is the complexity of gender systems. Finally, the study of this topic is also complicated by the varying role that gender systems appear to play in different social settings. Each of these problems is discussed in turn.

The Aggregated Nature of Demographic Change

Fertility or mortality decline, even if produced through individual actions, by definition occurs only at the aggregate level. Once a woman has had three children, she cannot decide to bear only two; and once a child has died, he or she cannot be brought back to life to enjoy the lowered risks of dying that subsequently affect a population. As the proximate determinants schemes noted earlier make clear, however, even though demographic change occurs across cohorts, the processes that result in that change occur at least in part through changes in individual behaviour. This is particularly true of fertility decline, but is also true for infant and child mortality because individual actions may alter the effects of environmental conditions. For example, in villages in some poor countries, water

from uncontaminated wells is often put into dirty containers, then used without boiling to feed infants and children who subsequently develop diarrhoea, a leading cause of infant and child death (Lindenbaum 1990). Individual actions can thus undermine the effectiveness of public health campaigns or public works projects designed to lower mortality.

It is primarily through their effects on individual actions that gender systems are hypothesized to influence fertility or mortality change (Mason 1984, 1987, 1993). For example, Caldwell (1979) argues that the enhanced independence and autonomy that women in poor countries gain by virtue of having attended school allows them to commandeer family resources such as better food and medical care for their children, thereby enhancing child survival.

That demographic change can be measured only when successive cohorts are observed, yet occurs partly or wholly because the individual women and men in these cohorts behave differently from those in earlier cohorts, poses a major challenge to demonstrating cause and effect relationships in a rigorous, quantitative manner. One must be able to demonstrate that the thing supposedly doing the causing—in this case, society's gender system—is actually leading the individual members of successive cohorts to alter their behaviour so as to result in lower fertility or mortality.

What kind of study design might allow one to demonstrate this? First, to permit analysis of demographic change, both the causal agent and the demographic outcome would have to be measured over successive cohorts. Second, both would have to be measured for the individuals in these cohorts, not just for the cohorts as aggregates, so that one could document that it was individuals experiencing particular gender conditions who in turn displayed the new forms of demographic behaviour. And third, one would have to measure and statistically control for possible confounding variables. In short, a multi-level, multivariate study covering successive cohorts is required (Smith 1989; Mason 1993).

Unfortunately, this kind of study is both complex and expensive. Because people often forget their past social relationships or reinterpret them in light of more recent experience, retrospective individual-level data on gender conditions are difficult to obtain or trust. Aggregate data on past gender conditions in the communities where women and their partners were living are also difficult to collect and pose the further problem that they may apply poorly to many individuals in those communities.

A rigorous causal study of gender and demographic change would therefore require a prospective design in which data for individuals belonging to successive cohorts are collected over time. Not only is such repeated interviewing expensive—keeping track of individuals is often difficult—but a prospective study of this type runs the risk that neither gender systems nor demographic outcomes will change. There are few researchers willing or able to embark on an endeavour requiring decades

before final results are obtained. Moreover, the value of such a study to policy-makers is questionable, given their need to make policy decisions in the short run, not a decade or more down the road.

In reality, then, studies of gender and demographic change are forced to compromise the ideal study design (as are studies of any form of social change resulting from the aggregation of individual actions). Past studies have used several alternative strategies. Some have considered aggregate data only (e.g. Mauldin and Berelson 1978). Such studies are able to incorporate temporal variation into the analysis, but are unable to demonstrate that there are individual-level connections between gender conditions and demographic outcomes.

Another strategy is to examine cross-sectional variation, substituting intercultural for intertemporal variation. This strategy was used in a much-cited aggregate analysis of kinship, gender, and demographic conditions across the states of India conducted by Dyson and Moore (1983). It also characterizes the multi-level, controlled-comparisons approach recommended by Mason (1993) and Smith (1989). In this approach, information is collected for individual women and men living in communities having distinct gender systems; the data are then subjected to multi-level analysis that incorporates both individual and community-level information.

As is well known, one weakness of cross-sectional studies for making inferences about social or demographic change is that cross-sectional relationships need not match over-time relationships. For example, although maternal education has a strong, inverse relationship with child mortality at the individual level in almost every developing country of the world that has been studied, the over-time relationship between female literacy or education and child mortality rates often is weak, nil, or even positive (Cleland 1990). A cross-sectional relationship between gender systems and demographic conditions may be *consistent* with an over-time relationship, but it does not prove that one exists. Nevertheless, as research on a number of social science issues suggests, cross-sectional studies are often the best starting point for understanding the forces that cause social or demographic change.

Even a multi-level, comparative study of the type that Mason (1993) and Smith (1989) recommend is quite complex and expensive, and must confront the problem that seemingly identical survey questions may have very different meanings in different cultural settings. Such studies consequently are rare.¹ Instead, much of the putative evidence in support of the idea that more egalitarian gender systems contribute to fertility or mortality decline comes from analyses of standard fertility surveys such as the World Fertility Survey (WFS) or Demographic and Health Survey (DHS). Some evidence comes from case studies of particular countries or communities. Although fertility surveys such as the WFS or DHS contain valuable information on demographic variables, they were not designed

to measure gender systems, nor to permit comparisons across them. This means that inferences about these systems must be based on highly indirect measures (see 'Measuring Gender Systems', below).

Single-country case studies offer the advantage of allowing one to study demographic trends, but they often lack a comparison or control group. This makes causal inferences difficult. For example, Knodel and his colleagues (1987) attribute Thailand's rapid fertility decline in part to the relatively high level of autonomy that women in that society supposedly enjoy. Without a comparison, however, it is difficult to judge whether this factor was important for Thailand's fertility decline or was simply an incidental co-existing characteristic of Thai society. Thus, while case studies can provide valuable insights about the history and proximate determinants of a population's fertility or mortality transition, they rarely provide rigorous evidence about gender systems as a causal agent.

In sum, because of the aggregated nature of demographic change and the individual-level behaviours through which gender systems are thought to bring about this change, the type of study ideally needed to verify causal connections is complex and costly. For this reason, most evidence derives from study designs that are less than ideal from a quantitative, hypothesis-testing perspective. To be sure, an accumulation of findings highly consistent with the hypothesized causal connection would go a long way towards providing convincing evidence, were the measures of gender systems used in these studies satisfactory. As we shall see, however, the measures used in most previous studies have been far from satisfactory. This could easily be remedied in the future and is consequently worth reviewing in detail.

Measuring Gender Systems

Because of their complexity, gender systems cannot be described by a single quantitative measure. Even gender stratification is multi-dimensional and varies by class or caste position, institutional sphere (e.g. the family versus the workplace), and life course stage, as well as by other characteristics of individuals or the group (Mason 1984, 1986). The same is true of gender roles. In what follows, I describe examples of specific measures used in the past and the problems associated with them in order to suggest possible improvements.

Gender stratification

Much of the literature on gender and demographic change has focused on gender stratification or on such subcomponents as female autonomy (Dyson and Moore 1983), women's empowerment (Schuler and Hashemi 1994), women's control of material resources (Cain *et al.* 1979), or their

freedom of movement (Morgan and Niraula 1995). In principle, it is possible to identify the precise nature of any of these aspects of gender stratification as they are manifested at the individual or household level, then to measure them directly through the use of survey questions or participant observation. Such measures can also be aggregated to higher levels in order to estimate community or country variation in gender systems.

For example, Schuler and Hashemi (1993) argue that there are six specific components to female empowerment in Bangladesh: (1) sense of self and vision of a future; (2) mobility and visibility; (3) economic security; (4) status and decision-making power within the household; (5) ability to interact effectively in the public sphere; and (6) participation in non family groups. In order to measure these six components for a study evaluating the impact of rural development assistance programmes on women's empowerment (Schuler and Hashemi 1994), they designed an interview schedule containing specific questions that, on their face, were related to each of the six domains of women's empowerment. Although surveys may not do a good job of measuring certain aspects of gender stratification (Caldwell 1985), the questions used by Schuler and Hashemi had face validity: what was being measured looked a lot like the concept that the researchers were interested in studying.

This is not true in most quantitative studies of gender and demographic change. Most demographic surveys, particularly those like the WFS or DHS that cover national populations, contain few non-demographic questions, and most of these concern the education and employment of women or their husbands. Likewise, the information collected in censuses and other government surveys relevant to gender stratification also tends to be restricted to education and employment, plus such demographic variables as current age and age at marriage; official statistics consequently concern these quantum, rather than specific and direct measures of gender stratification. Thus, much of the quantitative literature on gender and demographic change uses information about women's education, employment, occupation, age, the age difference between husband and wife, or the wife's age at marriage to measure gender stratification (e.g. Sathar *et al.* 1988; Jejeebhoy 1991; Chowdhury and Trovato 1994). These variables are, however, conceptually distant from the dimensions of gender stratification that are hypothesized to influence demographic change, as is evidenced by the fact that they usually are referred to as 'proxies'. Their validity consequently hinges on how strongly they are related to the relevant conceptual dimensions.

Demographers have only recently begun to assess the validity of the proxy measures (Balk 1994; Govindasamy and Malhotra 1994; Malhotra and Mather 1994; Niraula and Morgan 1994; Vlassoff 1994). Most studies to date have found varying relationships between the proxies and direct measures of inequality between the sexes. For example, in Balk's (1994)

study of Bangladesh, while better educated wives participated more in household decisions than did less educated wives, they were less physically mobile, a result estimated net of controls for socio-economic status and hence not simply a reflection of the tendency in Bangladesh for higher-income families to seclude their wives more thoroughly than lower-income families are able to. Even when proxies have consistent relationships to a variety of direct measures of gender stratification, the relationships often are weak, something that calls into question their usefulness as proxies.

Evidence also suggests that what may appear to be relevant proxies can sometimes prove irrelevant or, worse, misleading. For example, Gürsoy (1994) argues that in urban Turkey the husband's education is a better indicator of the nature of gender relations in the family than is the wife's education. Interpreting the husband's education as a measure of socio-economic status and the wife's education as a measure of gender stratification in the family (as demographers often do) may therefore provide a misleading picture of how gender systems affect the survival of infants and children. In a similar vein, Kaufmann and Cleland (1994) argue that the implications of female education for their empowerment may, in some social contexts, be the reverse of what is usually assumed:

In Islamic societies education may be an asset that enables a woman to make a good marriage. The better the marriage, that is, the wealthier her husband, the more likely it is that she will be confined to strict purdah. It is the less educated women who are forced to become independent decision makers because of the difficult social circumstances in which they find themselves. (Kaufmann and Cleland 1994: 197)

Women's employment has similarly been questioned as a proxy for their economic empowerment or control of material resources. Although it may seem plausible that a woman who earns money will have control over that money—or that someone who contributes to family income will thereby gain a right to participate in the family's economic decisions—this often is not the case in highly patriarchal societies. One reason for this is that women's employment in such societies is frequently viewed as part of their role as dutiful wives or daughters and consequently does not give them any extra claim to autonomy or control over household decisions (Salaff 1981; Lu 1984). Indeed, in some settings wives automatically give their earnings to their husband or mother-in-law, who then determines how these earnings are used (e.g. Jain 1970). Moreover, in very poor families all income is immediately spent on food and other necessities; there is no discretionary income about which to make decisions (Desai and Jain 1994). Thus, while paid employment may give women economic power or autonomy in some settings, this is by no means the case in all settings.

The use of gender stratification proxies poses another problem: the proxies may tap unmeasured factors other than gender stratification that can affect the demographic outcome under study. For example, Cochrane's (1979) well known review of education and fertility listed more than a dozen pathways through which education might influence women's fertility, only one of which (husband's marital power) involved the gender stratification system. Although some of the pathways through which variables such as female education or employment might influence fertility or mortality can be ruled out by the use of control variables, rarely can all of these alternative pathways be eliminated. For example, intensive studies conducted by LeVine and his colleagues (1991, 1994) in several developing country locales have shown that maternal education is positively related to child survival and negatively related to fertility, in part because of the language comprehension skills that even small amounts of low-quality schooling provide. Because demographic data sources almost never contain direct measures of language comprehension skills, this variable cannot be controlled statistically in studies of female education and fertility or mortality. Thus, even though female education has a strong, inverse relationship to fertility and its proximate determinants in most developing countries (Jejeebhoy 1994, 1995), and has a strong, positive relationship to child survival in virtually every such country (Cleland 1990), the importance of gender stratification in explaining these relationships remains unclear.

In sum, then, the measurement of gender stratification systems in most demographic studies to date has involved proxies of problematic validity or precision. Thus, even though the relationship of female education to both fertility and child survival is strong and consistent across a range of populations, the importance of gender stratification for demographic change has yet to be learned. Studies that use direct measures of different aspects of gender stratification would go far to clarify the true impact of gender stratification on demographic change. Indeed, as we see below, the few studies that have employed direct measures of gender stratification and that have incorporated gender system variation into their designs have indeed found evidence consistent with the idea that less gender stratification encourages fertility and mortality decline.

Gender roles

Equally complex as the stratification created by gender systems are the divisions of labour that they prescribe. These divisions have many facets and typically vary by class, caste, urban versus rural residence, social sphere, and life course position. Oppong has proposed a framework for studying demographic change that comprises seven roles of women

(maternal, occupational, conjugal, domestic, kin, community, and individual: see Oppong and Abu 1987). Few demographic studies, however, have paid much attention to roles beyond those of mother and worker (although see Desai and Jain, 1994, who study the domestic role of women as well as their occupational and maternal roles). Moreover, men's roles have been ignored almost completely, except when used as indicators of the family's socio-economic status or class position. Even in the case of women, because of the limited nature of what is measured in most demographic data sources, the majority of studies have focused on female employment and its relationship to fertility or child survival. Thus, one problem with studies of gender roles and demographic change is that most, in fact, address only a very limited aspect of the gender-based division of labour.

Even studies of women's employment and demographic change are problematic. As has been documented through experiments conducted in Egypt and India by Richard Anker and his colleagues, the standard questions used to measure women's employment in most developing country surveys and censuses (including the WFS and DHS) often under-enumerate women's productive work quite seriously (Anker 1983; Anker *et al.* 1988; Dixon-Mueller and Anker 1988). This may explain why the results relating women's employment to fertility are far more variable across countries than are the results for the education-fertility relationship (see 'Fertility' under 'What Do We Know?' below).

The typical study of female employment in relation to fertility or child survival is also difficult to interpret because of an absence of information on many of the pathways through which employment might influence the demographic outcome. This can lead to incorrect conclusions. For example, Desai and Jain (1994), using data for poor women living in rural Karnataka, India, show that women's domestic roles are so burdensome and time-consuming that the children of non-employed women are just as neglected by their mothers as are the children of employed women. Attributing differences in child survival rates between employed and non-employed mothers to differences in maternal attention would therefore be highly misleading in this setting.

In sum, then, past studies of gender roles and demographic change suffer from two main problems: most ignore roles other than maternal and occupational roles, and those that do consider these roles often use poor measures of employment and lack information on intervening variables. Learning that women's employment is not invariably associated with reduced fertility or enhanced child survival is useful, but it is difficult to interpret without better studies. Again, analyses that incorporate more complete and accurate measures of gender roles—and of the variables thought to intervene between these roles and fertility or mortality—would help us to understand the true impact of gender on demographic change.

The Varying Role of Gender in Demographic Change

The final problem that has rendered past studies of gender and demographic change less than fully informative is their failure to recognize that gender systems may play varying roles in producing demographic change. Mason (1993) notes that gender systems can in principle play two distinct roles in the fertility or mortality transitions. First, change in the gender system can precipitate *change* in the demographic regime. It is this possibility that people seem to have in mind when they argue that empowering women will lead to demographic change.

Much less widely recognized is a second possibility: that the pre-existing nature of the gender system will *condition* the impact that other changes have on demographic outcomes. For example, a significant increase in child survival may have less effect on fertility desires or the adoption of contraception in highly patriarchal societies than in societies where women have the freedom of movement, access to information, and personal autonomy, which in turn allows them to learn about and use effective birth control methods.

Mason (1993) argues that most hypotheses about the links between gender systems and demographic change in fact posit a conditioning rather than a direct effect. If true, this has important implications. One is that we should not expect there to be strong correlations between gender stratification and the onset of the fertility or mortality transition. For example, McNicoll (1994: 659) argues that

the case [for women's empowerment influencing their fertility] is weak. To take only the most obvious counter-example, the massive fertility decline in East Asia starting in the 1960s (and much earlier in Japan) has occurred in societies still notably patriarchal—some, indeed, displaying the most blatant male chauvinism.

In making this argument, McNicoll appears to assume that gender systems operate directly to bring about the fertility transition, rather than conditioning the impact of other changes.

If gender systems possibly play a conditioning role, then quantitative studies need to consider models in which measures of gender stratification or gender roles interact with other variables in predicting the demographic outcome. Few studies have done this. One exception is Cain's (1993) aggregate analysis of twenty-eight national populations with WFS data. He finds stronger relationships between the total fertility rate and four predictor variables (infant mortality, GNP per capita, average age of female marriage, and level of female school enrolment) in fifteen less patriarchal populations than in thirteen more patriarchal ones. (Average age difference between husband and wife is used to measure patriarchy.) In additive models for the two types of populations combined, however, many of these relationships are insignificant. (The direct effect of the husband–wife age difference is, however, significant in all of the additive

models.) Thus, until studies more systematically explore interactions of this kind, the role of gender systems in demographic change is unlikely to be understood.

A final point to note is that, not only are gender systems likely to condition the impact of other variables on demographic change; other features of social, economic, and political life are also likely to condition the impact of gender systems on demographic change. This means that strong, direct effects of gender systems on demographic change are unlikely to be found in all situations. Thus, the idea that women's empowerment is 'essential' for the long-term success of population stabilization programmes (United Nations 1995: 194) may indeed hold under certain circumstances, but is unlikely to hold under all of them.

WHAT DO WE KNOW?

Because other reviews (Mason 1984, 1987, 1993) have elaborated the alternative pathways through which gender systems might influence fertility and mortality change, and have assessed the evidence available through the mid-1980s, this section focuses on recent studies, especially those that best meet the methodological and measurement standards elaborated earlier. I also review several major comparative analyses that relate female education or employment to fertility or child mortality.

Fertility

As previously noted, few studies have combined direct measurement of gender stratification at the individual level with study designs that compare communities or countries differing in gender systems. The few to do so, however, have found significant effects of both community and individual-level aspects of gender on fertility or its proximate determinants. For example, Balk's (1994) analysis of 218 villages located in two districts of Bangladesh (one reputedly more traditional and patriarchal than the other) measured four aspects of the gender system at the individual level: women's mobility, their domestic authority, the household's leniency towards them, and their gender-role attitudes. These measures were used in the analysis both as individual-level predictors of the number of children ever born and, when aggregated to the village level (minus the respondent's own values), as community-level predictors. Mobility and leniency predicted fertility at both individual and village level, with stronger relationships occurring in the villages located in the more liberal of the two districts. Overall, the measures of women's status explained as much variance in fertility as all the other socio-economic predictors combined. Thus, where women were more able to move around without permission from family members, their fertility was lower.

Using a similar analytical strategy but data from only two villages chosen for their differing gender systems, Morgan and Niraula (1995) examined the impact of women's freedom of movement and voice in household decisions on fertility desires and the use of contraception in Nepal. Strong community and individual-level effects were observed for both dependent variables. Women in the relatively egalitarian hill village were more likely to say they wanted no more children than were women in the more patriarchal *terai* (plains) village; among those wanting no more children, contraceptive use was higher in the hills than in the *terai*. Both dependent variables were also predicted by the individual-level measures of women's autonomy.

A recent study conducted entirely at the aggregate level, using data for the districts of India (Malhotra *et al.* 1995), also found evidence consistent with the idea that the degree of patriarchy predicts fertility. The main gender indicator used in this study was the ratio of female to male mortality, which past studies of India (e.g. Miller 1981) have documented to reflect the extent of gender stratification. The female share of the labour force was also used. Both variables significantly predicted district total fertility rates, and together with several socio-economic variables explained away much of the initially large North-South difference in fertility that Dyson and Moore (1983) attribute to differences in gender stratification.

Several studies have taken advantage of what might be considered a fortuitous natural experiment in Bangladesh: the establishment since 1975 of several non-governmental and government-sponsored programmes to enhance women's literacy and income-earning capacity. The programmes include the Grameen Bank, which makes small loans to poor women to allow them to start or expand businesses; several programmes of BRAC (an NGO), including female literacy and loan programmes; and a loan programme sponsored by the Bangladesh Rural Development Board, a governmental body. A study by Amin *et al.* (1994) measured women's participation in all three programmes as of 1990, then examined the relationship of participation to use of contraception in 1992, net of controls for a variety of socio-economic and demographic variables. Participation in all three programmes had a significant, positive relationship to the use of contraception. This study did not measure gender stratification explicitly, but a more ambitious study conducted by Schuler and Hashemi (1994) focusing on the BRAC and Grameen Bank programmes did so.² Their analysis suggests that programme participation enhances women's power and encourages the use of contraception. The latter effect occurred largely via the intervening effect of empowerment.

Taken together, these studies suggest that there are indeed circumstances in which variation in gender systems at either a macro or micro level leads to variation in fertility and its proximate determinants. What are these circumstances? Although Balk's analysis suggested that effects

were stronger in areas with more liberal gender regimes (as did Cain's purely aggregate analysis described earlier), it is noteworthy that all of the analyses described here were conducted in Bangladesh, India, or Nepal, countries that are generally (although not uniformly) characterized by highly patriarchal gender systems. Could it be that in generally conservative settings, women or communities that break loose from traditional gender constraints are likely to become reproductive innovators as well, while in more liberal settings such effects are muted or non-existent? This question cannot be answered without analysis of a broader range of countries than has been covered in the past.³

A mechanism potentially intervening between gender systems and fertility regimes emphasized by several authors (e.g. Cain 1993) is the extent to which parents prefer to have sons rather than daughters. Strong son preferences will limit the extent or rapidity of fertility decline if 'unlucky' parents continue to bear children until their sex preferences are fulfilled.⁴ In both East and South Asia, especially in the more patriarchal countries in these areas, parents often express a strong preference for having sons (United Nations 1987: 63). A recent analysis at the individual level using data from Bangladesh (Rahman *et al.* 1990) suggests that the strong son preferences known to exist in that country (Ahmed 1981) affect the use of contraception. Other recent studies (e.g. Pong 1994) have failed to observe such effects, however, perhaps because of the covert use of *in utero* sex selection. In principle, however, son preferences remain one possible way in which gender systems may affect fertility in populations where fertility control has begun to be used.

With regard to studies that relate female education and employment to fertility or its proximate determinants, evidence from the WFS and DHS suggests that the education-fertility relationship is more consistent and robust than is the employment-fertility relationship, which often is positive or zero rather than the theoretically expectable negative (Rodríguez and Cleland 1980). This matches earlier results (Standing 1983). Among the possible explanations for this greater variability are under-enumeration of women's employment (see discussion above), the varying degree of incompatibility between working and caring for children across social settings (Weller 1968; Mason and Palan 1981), or the failure of employment to affect women's autonomy, power, or control of resources. The relationship between female education and fertility or its proximate determinants is negative in most settings, although curvilinear in some (Jejeebhoy 1995). There is some evidence that this relationship operates partly through the greater autonomy or power of educated than of non-educated women (Jejeebhoy 1995), although there are instances where individual-level measures of autonomy and power fail to explain the relationship even partially (e.g. Sathar and Mason 1993). Thus, evidence concerning the education-fertility relationship is partly but not wholly consistent with

the hypothesis that female empowerment leads to reduced fertility and increased contraceptive use.

Childhood Mortality

Caldwell (1986) can be credited for presenting one of the first arguments that women's autonomy enhances child survival. In a country-level analysis of mortality 'outliers'—countries whose mortality rates were well above or well below what would be expected on the basis of national income levels—he noted that many of the mortality 'under-achievers' were countries in the Islamic Middle East where women's freedom of movement and personal autonomy is restricted. (On the issue of Islam and gender systems, see Obermeyer 1994.) Since then, a number of small-scale studies employing direct individual-level measures of the gender system and, in some cases, community-level measures as well have found evidence consistent with the idea that greater gender equality enhances child survival (Caldwell *et al.* 1983; Khan *et al.* 1989; Das Gupta 1990; Basu 1992). There also is evidence that maternal education enhances child survival in part because it makes women more self-confident and self-assertive (Kaufmann and Cleland 1994), or creates a more conjugal, communicative relationship with the spouse (LeVine *et al.* 1991).

Women's education is conceptually and empirically distinct from gender stratification but is often hypothesized to be correlated with it. In any case, this variable is consistently and strongly related to child survival and several of its proximate determinants, such as the use of health care and better hygiene; this is true even when the socio-economic status of the family is taken into account (Cleland and van Ginneken 1988; Cleland 1990; Cleland *et al.* 1992; Bicego and Boerma 1993; Hobcraft 1993; Brockerhoff and De Rose 1994). A recent summary of what we know about this relationship (Caldwell 1994), however, argues that we still do not have a good understanding of the mechanisms through which education affects child survival, including effects involving the gender system.

The impact of women's employment on child survival is more controversial than is the impact of their education. While often giving women resources that can then be used to improve child nutrition or health care, employment may also reduce the time and attention that mothers can give their children (Basu and Basu 1991). The net effect of maternal employment on child survival appears to vary by setting, perhaps because of the varying balance between these two forces. Whether this explains the varying relationship has yet to be determined empirically, however.

There is considerable aggregate-level evidence that many (although not all) countries with strongly patriarchal gender systems have higher rates of mortality among female children than would be expected on the basis of biological differences between the sexes in underlying frailty

(Hill and Upchurch 1995). A district-level analysis in India also confirms that kinship structures and female labour-force participation rates—variables that Dyson and Moore (1983) suggest reflect gender differences between North and South India—are related to the relative survival of female and male children (Kishor 1993). The existence of excess female mortality has been especially well documented in South Asia (Das Gupta 1987; Muhuri and Preston 1991), where micro-level studies have found evidence of nutritional discrimination against girls (Chen *et al.* 1981; Das Gupta 1987; but see Basu 1989, for a counter-example; Hill and Upchurch 1995 also find no evidence of a country-level link between female child nutrition and excess female child mortality in their study of DHS samples). Medical-care discrimination against girls has also been observed in South Asia (Chen *et al.* 1981; Basu 1989). Cleland (1990) concludes that sex differentials in child mortality cannot explain the link between maternal education and overall child survival. Nevertheless, there is little question that a strongly patriarchal gender system can, in some circumstances, result in an elevated death rate for female children. There is also growing evidence that it can increase the sex-selective use of abortion (Park and Cho 1995).

In sum, then, there is some evidence that, cross-sectionally, gender inequality is associated with higher levels of childhood mortality. There also is clear evidence that gender stratification can lead to sex differentials in childhood mortality, at least under certain circumstances. Whether gender systems play a strong role in mortality decline is, however, unknown at this time.

THE IMPACT OF DEMOGRAPHIC CHANGE ON GENDER SYSTEMS

A large literature on women and development addresses the question of how societal development affects gender inequality, but relatively little of it focuses on the impact of demographic change. Most of it that does, moreover, is theoretical and speculative, rather than empirically based. Huber (1991) is one of the few mainstream sociological theorists of gender stratification to stress the historical importance of mortality and fertility decline for gender system change. By freeing women's time from childbearing and child rearing, Huber suggests, demographic change indirectly promotes a reordering of gender relations through such mechanisms as female protest movements. Theoretical perspectives that point to women's 'comparative advantage' in bearing and rearing children as the basis for the historically dominant gender-based division of labour—and the gender stratification to which it gives rise—also imply that when fertility falls to very low levels the rationale for the traditional division of labour is seriously undermined.⁵ The implication is therefore that

modern demographic regimes—with replacement or below replacement levels of fertility and high life expectancies—may be a precondition for gender change. It seems unlikely, however, that they are sufficient to produce this change on their own.

In so far as life is universally valued and its prolongation desired by those living under moderate to high mortality risks, the greater elongation of female lives compared with male lives which almost invariably occurs when mortality falls to very low levels may be said to benefit women. Whether the growing longevity gap between women and men observed in almost all low-mortality populations in any way affects institutionalized gender systems is, however, unclear. The balance of males and females of marriageable age has been argued by some observers to influence the status of women: a relative scarcity of females is said to increase their value on the marriage market (Guttentag and Secord 1983). When this balance occurs in old age, however, its implications may be quite different from when it occurs in the marriage-age population. For example, high levels of widowhood seem unlikely to benefit women, at least in settings where traditional forms of familial support for the elderly are eroding and have yet to be replaced by community or other non-family support systems (Mason 1992). Moreover, an increasing value of females brought about by their relative scarcity seems unlikely to bring about fundamental changes in the gender system in the short run, even if temporarily enhancing the respect with which young women are treated, or their material well-being. Indeed, in highly patriarchal settings an increase in the value of young women might encourage parents to *tighten* controls over daughters so as to preserve their value on the marriage market.

At the individual level, Presser (1971) has suggested that the timing of marriage and motherhood can have strong effects on women's subsequent achievements and well-being. There is also speculation—and some evidence—that the age at which women marry can affect their subsequent level of autonomy and power within the family (Cain 1993; Govindasamy and Malhotra 1994). The age at which females marry has been rising throughout Asia and in many other regions (Mason 1995) and is an important component of fertility decline in some countries (Freedman 1995). Again, although we do not know whether a change of this kind will necessarily contribute to a change in the gender stratification system, it is plausible to think that a higher age at marriage for women, along with reduced fertility, may set the stage for eventual gender change.

In sum, then, although quantitative research into the question of how demographic change influences gender systems is scarce, there is reason to think that the demographic transition may serve as a precondition for the 'gender transition' in many parts of the world. Radical shifts in social institutions arise through political processes; hence demographic change alone will not revolutionize a society's gender stratification system. It

may, however, set in motion behavioural and material changes, such as increasing the employment rate of married women, which in turn contribute to gender change.

SUMMARY AND CONCLUSIONS

This review has made four points.

First, although gender is an important demographic variable that until recently was ignored in most demographic studies, claims that women's empowerment is universally necessary or sufficient for fertility or mortality decline are as yet unsupported empirically. If demography as a field has learned anything about the fertility transition since 1975, it is that there are many pathways to fertility decline, each reflecting the unique socio-cultural, economic, and historical conditions faced by a given population. In light of this insight, it would be astounding indeed to learn that a single institution (namely, the gender system) has a consistent and predictable impact on fertility or mortality in all social and historical contexts, even if it is critical in some contexts.

Second, as is the case for many forms of social change, testing claims about gender and demographic change is inherently difficult because it involves studying gender systems simultaneously at the individual and aggregate levels, using over-time measurement of complex, multi-dimensional concepts. Understandably, few studies have come close to matching the ideal study design. The measurement of gender stratification variables has been especially problematic. There are beginning to be good models suitable for replication in other settings, however, and studies using these models would go far in providing the evidence we need.

Third, there is beginning to be evidence that in some contexts gender inequality conditions, or directly influences, the level of fertility, the use of contraception, the rate of overall child survival, and the nature and extent of sex differences in child mortality. The contexts in which such effects do and do not exist are not well understood, however. It should also be noted that cross-sectional relationships do not necessarily translate into over-time relationships, although the apparent effects of empowerment programmes on contraceptive use in Bangladesh suggest that a reduction in gender stratification might lead to demographic change there.

Finally, although there is little research on how demographic change influences gender systems, plausible theoretical links exist. In particular, the achievement of a modern demographic regime may be one precondition for changes in women's and men's lives that eventually lead to a less stratified gender system.

What do these points suggest for future research and for policy? With regard to research, two points are evident. First, from the perspective of quantitative evidence, we need additional studies, employing a multi-level,

comparative design, which are based on the precept that gender is organized by social systems, not just by individual traits, and which measure key dimensions of gender stratification and gender roles directly and in detail. In these studies, special consideration needs to be given to how gender systems condition the impact of other factors, as well as to the contexts in which gender systems are especially important for demographic change.

Second, because of the complexity of gender systems and their historical and cultural peculiarities, holistic studies of the demographic and institutional history of a few countries may provide important insights into the role of gender systems in initiating demographic change. Demographers are beginning to recognize that states play a very important role in determining institutional and demographic change (Johansson 1991; Caldwell 1993; Greenhalgh and Li 1995), not only through explicit policy but also through a variety of actions and inactions that Johansson (1991) has termed 'implicit' policy. The historical role of the state cannot be readily understood through analysis of cross-sectional survey data. Rather, it requires a careful historical reconstruction of the kind that Johansson (1991) provides for Great Britain and Greenhalgh and Li (1995) provide for China.

In terms of policy, it is important to recognize that steps to equalize the conditions under which women and men live are desperately needed in most countries of the world and are fully justified on humanitarian grounds. Justification in terms of the supposed population effects of gender equalization is neither necessary nor necessarily desirable. It is a moral outrage that millions of women and girls are exposed daily to physical and psychological abuse, exhaustion, hunger, malnutrition, illness, and even death simply because they were born female. If governments are to be told that they need to right this wrong, not because it is wrong, but rather because it will help to achieve population stabilization, what is to convince them that the empowerment of women is a fundamental moral obligation that exists regardless of population policy and goals? To be sure, population stabilization may itself contribute to an improvement in women's lives, which is one reason why research into the links between demographic change and change in gender systems is critical. The well-being of the world's population, however, requires not only population stabilization, but also an end to the abuses to which females have been subjected for far too long.

NOTES

1. Most such studies have been conducted within single countries, although across communities supposedly varying in gender systems. Countries in which studies of this type have been fielded include Colombia (Florez and Hogan

- 1990a, b), Nepal (Morgan and Niraula 1995; Niraula and Morgan 1996), Nigeria (Kritz and Makinwa-Adebusoye 1995), and Tamil Nadu, India (Dharmalingam and Morgan 1996). A five-country comparative study involving communities in Pakistan, India, Malaysia, Thailand, and the Philippines is currently being analysed by Mason, Smith, and their collaborators (See Mason *et al.* 1989).
2. Unfortunately, Schuler and Hashemi combined a number of distinct measures of gender stratification into a single scale, thereby obscuring whether some aspects of gender stratification are more important than others for contraceptive use.
 3. The five-country comparative study of women's status and fertility in Asia mentioned in n. 1 offers the possibility of better understanding the conditions under which gender influences fertility because it covers three South-East Asian countries that have relatively liberal gender systems as well as two South Asian countries.
 4. The advent of technologies such as amniocentesis and ultrasound which permit foetal sex identification and hence *in utero* sex selection through the use of abortion may change this relationship. For evidence that such sex selection has become widespread in South Korea, see Park and Cho (1995).
 5. The comparative-advantage assumption implicitly undergirds most materialist theories of gender stratification in the fields of anthropology (Friedl 1975), sociology (Collins *et al.* 1993), and economics (Becker 1981).

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Marriage Change as Moral Change: *Culture, Virtue, and Demographic Transition*

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Surveying the field today, it is impossible to imagine an anthropological demography that fails to acknowledge the extraordinary impact of Jack Caldwell. In a series of watershed articles, papers, and books ranging across substantive, theoretical, and methodological themes, Caldwell has helped to confer a new demographic legitimacy on the research strategies of anthropologists. Methodologically, the micro-demographic techniques formalized by him have encouraged more anthropologists to pursue demographic field research while also drawing members of the demographic community towards new syntheses of these two traditions (Kertzer and Fricke 1997). Theoretically, Caldwell's modification of demographic transition theory and his development of the wealth flows theory of fertility decline continue to motivate new studies and commentary. Substantively, his contributions to the study of fertility and family transitions in multiple contexts are landmark empirical studies for their settings.¹

Like that of most demographers, Caldwell's research is continually marked by the reasonable tendency to move outward from the demographic variables of interest. Thus, his interest in fertility anchors the questions asked throughout fieldwork, indeed constituting the point of entry into the research setting itself. This approach, differing in important ways from the avowedly more 'holistic' concerns of anthropologists, is well illustrated by Caldwell's report of his procedures in South India (Caldwell *et al.* 1988b).

Sociocultural anthropologists, on the other hand, tend to consider behaviour as much more thickly contextualized than do demographers. They enter societies with a concern for localized patterns at multiple levels including the cultural, social-organizational, and behavioural; they are

The research and work on which this paper is based was supported by grants from the National Institute of Child Health and Human Development (USA) and the Mellon Foundation. Thanks to Jack Caldwell, Dilli R. Dahal, Susan Greenhalgh, Gavin Jones, David Kertzer, Geoff McNicoll, Elisha Renne, Gigi Santow, Arland Thornton, and Susan Watkins for their comments on earlier drafts.

likely to call on data beyond the level of individuals in formulating their models; and they are prone to admit different and variable standards of proof and argument into their discussion (Fricke 1997; Hill 1997).² To be sure, demographers, notably Jack Caldwell himself (1985) and Geoffrey McNicoll (1988), have criticized the limitations of once-standard demographic reliance on survey approaches, but the pull of anthropology towards local context and towards the larger cultural themes of worldview and motivation continues to chafe against demography's tendency to confine the entry into a society to the more demographically proximate variables.

The importance of these ideational realms to demographic process is illustrated by Susan Greenhalgh's (1988) criticism of the rigid cross-cultural application of fertility-transition models that assume childbearing aspirations to be ends in themselves. Greenhalgh identifies unique cultural and institutional motivations, separate from the values of children to social security and household maintenance, influencing childbearing in a region defined by Chinese state and cultural influence. She frames her argument as a critique of those approaches focusing on a narrow universal economic rationality as the primary explanation for fertility limitation. She suggests that research move beyond the reliance on individual-level explanations alone to include attention to localized institutional and cultural contexts. These contexts mediate the relation between straightforward economic goals to affect demographic processes (Greenhalgh 1988: 631).³

In this paper I follow the lead of Greenhalgh (1990, 1995) and others (Hammel 1990; Kertzer 1995; Townsend 1997) to elaborate on what a distinctly anthropological approach has to offer to our understanding of demographic transitions. I do so by expanding on themes already present in much demographic work. While their presence intersects with the anthropological focus on cultural systems, however, they tend to receive less attention in demographic research. For example, while Caldwell, like Greenhalgh, emphasizes that 'fundamental goals are social goals [and that there] is no such thing as an economic satisfaction which is not also a social satisfaction' (Caldwell 1982: 336), he tends to leave the connection of those social goals to wider cultural currents unexamined. Similarly, Caldwell's account of familial morality intersects with frequent anthropological attention to moral systems as a foundation for understanding cultural motivation (Firth 1963, 1964; Fortes 1978: 125), but his account focuses on the undergirding of production systems rather than on the motivational structures themselves.

Here I attend to culture and morality as components of family transition within societies in which marriage and the relations it institutes are fundamental organizational principles. These societies have been characterized in the anthropological literature as 'alliance' societies, or societies in which relations of affinity are as significant as those of descent

in organizing social membership (Dumont 1957; Leach 1961; Barnard and Good 1984). Their characteristics tend, with a few exceptions, to receive cursory treatment in the demographic literature even though they are common to a wide range of settings and are arguably crucial aspects of the social world of their adherents.⁴

Appeals to morality and moral systems make more frequent appearance in demography, usually in the form of normative statements about rights and obligations regarding relations between people.⁵ My attention to these themes makes use of convergent works by cultural theorists and sociologically sensitive moral philosophers which stress the internalized motivations of social actors (D'Andrade 1984, 1992; MacIntyre 1984, 1992; Taylor 1989; Flanagan 1991; Strauss 1992).

In what follows, I will first briefly review the recognized demographic significance of marriage and marriage systems, raising the issue of what special features in alliance settings may have demographic relevance. I follow that discussion with an outline of an anthropological approach to understanding behaviour and moral motivation in cultural context. This is followed by an illustration with empirical material from my own research within a distinctly alliance setting, after which I draw out the implications for method and theory in the study of family and demographic transitions.

THE DEMOGRAPHIC RELEVANCE OF MARRIAGE

The significance of marriage to the explanation of fertility is already acknowledged by nearly every demographic practitioner. Davis and Blake (1956) included a discussion of the factors surrounding marriage in their seminal essay on social structure and fertility. Further along the continuum of demographic interest, even the most formal of proximate determinants models must consider the impact of marriage timing and frequency of intercourse within marriage (Bongaarts 1976, 1978). Such considerations open the way to anthropological approaches that embed marriage within wider systems of kinship and culture, which define group boundaries, relationships, internal obligations, and the significance of affection (Fortes 1978: 124–5; Barnard and Good 1984; Macfarlane 1986). In those societies where family and kinship organize the widest array of social and production processes, variations in marriage form are critical to the understanding of social life.

Marriage as System

Alan Macfarlane illustrates these anthropological concerns with marriage in social and cultural context. He asserts that marriage is so central to

demographic processes that the contrast between pre-transition and transition societies effectively turns on the nature of their marriage systems. Analysing the cultural assumptions of Malthus about the nature and purposes of marriage, Macfarlane writes:

Malthus assumed monogamy, though most societies at his time practised polygamy; a fairly egalitarian relationship between husband and wife, while most societies assumed male dominance; unbreakable marriage, though most permitted easy divorce; permissive remarriage, though the majority either forbade remarriage or made it mandatory; independent residence after marriage, though the majority of societies have been virilocal or uxorilocal; a fairly equal contribution to the conjugal fund, though the usual situation was for wealth to flow preponderantly from either bride's or groom's group. (Macfarlane 1986: 35)

Macfarlane (1987) also argues for parallel contrasts at other levels between the peculiarly English definitions of personhood, nature, evil, and love and those typical of other settings. In short, marriage practice is tied to a whole array of culture-laden conceptualizations that embed it within distinct forms of kinship and systems of meaning.⁶ For England, these attributes involve cultural conceptions of the person (autonomous individualism),⁷ the organization of families (nuclear, conjugal-based units), and the emotive power of cultural goals (romantic love).

The variety of marriage systems, of course, goes far beyond the simple contrast of the English system against all others that a narrow reading of Macfarlane would imply. Looking at the institution solely in terms of its role as a marker of rights, Edmund Leach (1961) once suggested the following incomplete shortlist:

- A. To establish the legal father of a woman's children.
- B. To establish the legal mother of a man's children.
- C. To give the husband a monopoly in the wife's sexuality.
- D. To give the wife a monopoly in the husband's sexuality.
- E. To give the husband partial or monopolistic rights to the wife's domestic and other labour services.
- F. To give the wife partial or monopolistic rights to the husband's labour services.
- G. To give the husband partial or total rights over property belonging or potentially accruing to the wife.
- H. To give the wife partial or total rights over property belonging or potentially accruing to the husband.
- I. To establish a joint fund of property—a partnership—for the benefit of the children of the marriage.
- J. To establish a socially significant 'relationship of affinity' between the husband and his wife's brothers. (Leach 1961: 107–8)

Yet the transfer of rights is only one dimension among several possible candidates for determining the diversity of marriage systems.

Marriage and Alliance

Leach's last item is a characteristic of many societies in that important group which has come to define alliance societies. The principles organizing these societies were defined in a series of debates around the wider application of models derived from African ethnography where descent was taken as a central organizing principle. Proponents of alliance theory argued that, in many contexts, relations of affinity were at least as important as descent (Kuper 1988). Characteristically, these relations were found in settings where various forms of cross-cousin marriage receive organizational emphasis (Dumont 1957; Leach 1961; Fricke 1990a), a potentially vast range with representation on every continent. Jack Goody, for example, reports that some 48 per cent of the 673 societies enumerated in the *Ethnographic Atlas* permit some form of cousin marriage; the majority of these focus on the marriage of cross-cousins (Goody 1973: 32).

In spite of its widespread representation, few demographic studies have focused on the demographic implications of cross-cousin marriage. Those studies that do exist, however, suggest that important differences distinguish them from societies organized along other dimensions. Dyson and Moore's (1983) now classic comparison of regional patterns of fertility and sex-differentiated mortality in India provides the best evidence of systematic differences related to kinship organization. They distinguish at the extremes between the classic North Indian and South Indian systems. Three characteristics define the northern system:

First, spouses must be unrelated in kinship reckoning, and often too by place of birth and/or residence . . . Second, males tend to cooperate with and receive help from other males to whom they are related by blood, frequently their adult brothers. Third, women generally do not inherit property for their own use, nor do they act as links through which major property rights are transferred to offspring. (Dyson and Moore 1983: 43)

In contrast, the southern system is characterized by (1) a system of cross-cousin marriage or, in cases where marriage is not between actual cross-cousins, the treatment of marital relatives (affines) as though they were, in fact, related in such a manner; (2) a system in which 'males are at least as likely to enter into social, economic, and political relations with other males with whom they are related by marriage (i.e. affines) as they are with males with whom they are related by blood (i.e. by descent)'; and (3) a system in which women may inherit or be important links in the transfer of property (Dyson and Moore 1983: 44).

Dyson and Moore point to additional features contrasting the southern system with that of the North, many of which, like those above, are widespread in those societies addressed by alliance theory. Thus, in the South Indian case affinity and descent are equally important organizational

principles; female chastity is less highly sanctioned; women are closer to and interact more with their natal kin after marriage; affective ties between spouses are less threatening to the descent group; married daughters are more likely to be on hand for assistance to their parents in later years; and women are more active in the income-generating economy (Dyson and Moore 1983: 45). Most of these features have been noted in contrasting other cross-cousin, or alliance, systems with the more patrilineal, patriarchal extended families emphasized by Caldwell's models (Acharya and Bennett 1981; Fricke *et al.* 1993).

Dyson and Moore suggest that these structural differences result in a higher level of autonomy for women with consequent higher levels of family planning, labour force participation, and literacy. They also note the lower indices of son preference and fertility and higher ages at marriage in these settings. Some of these findings have again been replicated in cross-societal comparisons elsewhere (Acharya and Bennett 1981; Ross 1984).

A somewhat different point emerges from my own research, in which I have explored variations along types of marriage *within* a society organized along alliance lines. My colleagues and I have found significant differences in fertility and other outcomes linked to the degree to which individual marriages conformed to alliance models. Thus, women whose parents married cross-cousins and who engaged in formal marriage rituals were more likely to marry later than those whose parents had entered into other marriage forms (Dahal *et al.* 1993). On the other hand, women who were in unions with a cross-cousin chosen by their parents entered into childbearing more rapidly after marriage than did women whose parents chose a non-relative (Fricke and Teachman 1993). Other analyses confirmed the relevance of marriage forms to ages at marriage and the subsequent nature of affinal relationships (Fricke *et al.* 1993; Fricke 1995).

The evidence therefore indicates that the structure of marriage systems and the individual practice of marriage make a difference for demographic processes. Taking Macfarlane's point that these systems are connected to more encompassing cultural characteristics, it remains to develop a framework for making these links.

TOWARDS A CULTURAL DEMOGRAPHY OF MARRIAGE TRANSITIONS

The new *rapprochement* between anthropology and demography has generated several important, and not always reconcilable, statements of anthropological approaches to culture and demographic events (Greenhalgh 1990, 1995; Hammel 1990; Kertzer 1995; Fricke 1997).⁸ Disparate as these

statements are, they are fundamentally united in their orientation towards cultural models that posit a dynamic relationship between individuals and the strategic manipulation of behaviour towards a range of cultural goals.

Culture, for these anthropologists, is no longer the static construct with which demographers are most familiar from the anthropology of forty years ago (Hammel 1990: 456). It is historically contingent and subject to rapid bouts of change in ways that should disturb any demographer's hope of finding a convenient proxy for culture in multivariate analyses. Just as the structural models of both descent and alliance theorists collapsed under their own rigidity (Kuper 1988), no contemporary anthropological demographer adheres to those older foundational models of culture. Nevertheless, for all of its flux, cultural analysis can have demographic relevance, as the Greenhalgh analysis referred to above indicates.

Cultural Models

An approach I have found useful in my own work takes its departure from cultural theorists who are especially insistent on the complexity and partial autonomy of cultural processes (Alexander 1988), treating culture as, in part, yet another contextual level with parallels to social and institutional contexts.⁹ Within this tradition, Clifford Geertz (1973) developed the notion, important to theories of meaning and motivation, of cultural patterns as both models *of* and models *for* reality.

As models *of* reality, cultural patterns constitute the perceived worlds of human actors and define the significance of behaviours and institutions for the analyst. Importantly for theories of family transition, these models define the relevant sets of actors and the bounds of local groups in culture-specific terms. Beginning with these models of reality also allows demographers to discover what is behaviourally significant from the point of view of the actors themselves. Behaviours that are trivial in one setting may take on significant meanings in another and these meanings may have demographic relevance. Knowing what behaviours actors find significant to choices of potential demographic importance requires attention to the background horizons that give them meaning.

Taken as models for reality, cultural patterns offer a partial resolution to the problem of establishing motivation for actors within a common cultural context. Actors are necessarily aware that their actions have meaning for those around them. Behaviours, apart from their implications for demographic outcomes, are also statements or symbols of relationship and subject to interpretation. While a useful heuristic category for beginning to understand cultural motivation, Geertz's account of these models is somewhat unsatisfying without a discussion of the plausible means by which they are internalized for actors.

Analytic Levels and Demography

Although cultural patterns can be analysed separately and in their own terms, their linkage with other analytic levels is a central issue for demographers. Geertz developed the approach to culture sketched above while still acknowledging the Parsonian framework emphasizing the three analytic dimensions of culture, society, and the individual. Just as Parsons never seriously developed the mechanisms by which context and behaviour were connected, Geertz's own later development had the effect of disconnecting culture from its reciprocal relations with individual behaviour and subjective experience. This model left little room for the demographic interest in dynamic causal analyses (Hammel 1990). Since then, culture theory has moved back towards the direction of linking culture, individual motivation, and behaviour (Ortner 1984).

Jeffrey Alexander (1988) explicitly discusses this linkage in his own work. In this perspective, behaviours are viewed as strategies carried out within constraints and with resources that are culturally and materially defined. This analytic model shows great promise for reconceptualizing analyses of demographic outcomes by striving to link levels of analysis without asserting the priority of one over the other. The cultural level both constructs and provides evaluative meaning to the social reality of actors. The social-system level provides normative constraints and guidelines and allocates social resources. Individuals pursue strategies in terms of these larger contexts and in terms of their own life-course experiences within these contexts.

Recent work in cultural psychology has also modified earlier failures in cultural theory to accommodate variation among individual actors. While continuing to recognize that cultural models may have motivational force, Strauss (1992) and D'Andrade (1992) argue, for example, that knowing the 'dominant ideologies, discourses, and symbols of a society' (Strauss 1992: 1) constitutes a first step in analysis that must be followed by attempts to link these intersubjective symbols or meanings to individuals. They suggest that actors vary with respect to their internalization of culturally defined motivations and that the differential experience of buttressing events throughout the life course may explain some of that variation. It follows that we might expect those individuals who engage in practices closely linked to cultural models of the good or the moral will be more likely to have internalized cultural motivations than those who do not (D'Andrade 1992).

Morality and Culture

Anthropological concern with moral behaviour is as old as the discipline itself. Early approaches, however, conflate different aspects of moral systems and collapse cultural morality into ill-defined concepts running from

values to norms to rules. One property of these approaches, still found within both anthropology and demography, is the distillation of morality to rules and norms governing relations between people (Firth 1963; Caldwell 1982: 208–11; 336–9). Added to the confusion is a tendency, inspired by utilitarian epistemologies, in some of the more recent actor-oriented approaches to decision-making, to assume rational actors who calculate their relative options against a single standard of value.¹⁰

These approaches are inconsistent with the recent developments in culture theory recounted above because they focus on negative sanctions, control, and enforcement mechanisms rather than on the culturally various internalized motivations for behaviour (D'Andrade 1984: 97–8). Moreover, they unduly constrict the reach of the moral in social action (Taylor 1985b; Flanagan 1991: 17; MacIntyre 1992; Johnson 1993: 104–7).

The writings of Charles Taylor and Alasdair MacIntyre offer solutions to some of the conundrums bedevilling the anthropological discussions of morality and values. Taking the issue of the differential weight of values and norms first (Firth 1964), Taylor suggests that we evaluate our desires in one of two ways: by weak evaluation, in which 'we are concerned with outcomes', or by strong evaluation, in which 'we are concerned about the quality of our motivation' (Taylor 1985b: 16). Elsewhere, Taylor links these strong forms of evaluation to identity (1985b: 34), cultural notions of the good, and motivation (1985b: 236–7).

These notions of the good are internalized by actors as an outcome of their practice (MacIntyre 1984; 1992). Moreover, descriptions of this process by which the goods of social practice are internalized are consistent with current accounts of life-course theory as applied to social transition (Elder 1987; Thornton and Lin 1994: 7–15). The internalization of goods proceeds sequentially in the progressive experience of individuals as they enter into the activities that constitute social life for their time and place. Their introduction is naive and is driven by the authority of others who have already internalized the goods in these practices. Individuals are, in effect, enculturated into the good. Of course, 'what has to be learned always can be mislearned' (MacIntyre 1992: 7; Strauss 1992), and this is part of the process by which cultural goods and the practices that embody them can change.

Finally, it is not necessary for cultural actors to be able to give a complete account of the relationships between practices and goods; their reasoning need not rise to the analyst's level (MacIntyre 1992: 16–17; Flanagan 1991: 21).¹¹ Indeed, most anthropologists—especially in their first ethnographic fieldwork—have had the experience of asking an informant the reasons for a particular practice, either ritual or social, only to be confronted with the answer (or its equivalent). 'Because our grandfathers told us to do it this way'. Thus, the discovery of culture-based motivations requires analysis.

An Approach to Marriage

The pursuit of analyses in these terms implies research styles in addition to those that currently dominate demography. Selection of appropriate variables aside, much demographic analysis would proceed as it has up to now, but the placement of levels of analysis within an overall framework would reveal new possibilities for incorporating meaning into analysis. At the very least, cultural analysis would not be straitjacketed into the formal causal models of individual-level analyses. In so far as cultural patterns provide a necessary context for understanding meaning and motivation, these issues call for explorations beyond those that already incorporate social and community contexts into individual-level analyses, resulting in a thicker, more culturally grounded, demography (Fricke 1997).

Methodologically, the approach emerging from these considerations argues that we begin by establishing cultural models of reality (Geertz 1973; D'Andrade 1992; Strauss 1992) and the cultural notions of the good that pervade them. These models, and the goods to which they are closely tied, are available to the analyst in ways that should not deter the empirically minded (Wuthnow 1987). Thus, Sherry Ortner argues for the presence in all societies of a finite number of recurrent or 'key elements which, in an ill-defined way, are crucial to [their] distinctive organization' (Ortner 1973: 1338). These elements may be symbols, themes, or scenarios and their various functions may include the orientation of conceptual experience and the provision of cultural strategies for behaviour. The elements have a reality discoverable from a variety of indicators by 'even the most insensitive fieldworker' (Ortner 1973: 1339); one critical method of discovery is their repetition in many different contexts.

As with cultural goods, a society may be characterized by more than one of these key elements (Ortner 1973: 1339; Taylor 1985a), but it is likely, where marriage is as central an organizing practice as it appears in alliance settings (and probably most other settings), that they will be embodied in those practices. Procedurally, we would want to explore the relationship between marriage practices and those goods and draw the connection between specific behaviours as enactments of these moral principles. The meaning of practices, the individuals involved, and the boundedness of groups all require the application of a localized cultural lens before their significance for such demographically relevant processes as familial nucleation and the like can be discovered.

TIMLING: MARRIAGE CHANGE AS MORAL CHANGE

In order to make these connections more concrete, I briefly illustrate the relationships highlighted by this approach with published and ongoing

analyses from a remote setting, Timling, where my colleagues and I have been conducting anthropological and micro-demographic research since 1981.¹² Because substantial and observed changes in marriage practices and more general social life have occurred in the community throughout my period of association with its people, I will characterize its moral climate in terms of a starting point before discussing the evidence for these transformations.

Timling is a central Himalayan community inhabited by an ethnic group, the Tamang, notable for their adherence to anthropological models for alliance societies. In 1988 when the last detailed census was conducted, Timling was a nucleated village of 142 households and 669 people located near the Nepal–Tibet border on a narrow shelf of land at about 7,500 feet in elevation. Its residents are Tibeto-Burmese language speakers bearing social–organizational similarities with other Tibeto-Burmese groups throughout the Himalayan arc from Nepal to Burma and South-West China (Leach 1961; Levi-Strauss 1969; Acharaya and Bennett 1981). Like these other groups, the people of Timling are notable for their exchange ethic, their organization into exogamous patrilineal clans, and their expressed preference for and practice of various forms of cross-cousin marriage.

Timling's economy overwhelmingly centres on subsistence agriculture and pastoralism within the local territory, although community members are increasingly drawn into the wage labour economy outside the region. The society's character throughout the research period matches those categories that Caldwell (1976) calls 'primitive' or 'traditional'. Consistent with those categories, its people tended to stress the economic values of children when recounting their importance in 1981. Another important value was intermingled with these, however:

Having many children divides the work and makes sure there are more if some die. Parents will be taken care of. Children tie us to other households. They teach each other their skills. (32-year-old woman quoted in Fricke 1994: 183)

This value of tying households together points to the need to consider Timling's demographic regime in connection to marriage and larger contexts.

An Ethos of Exchange

If, as for key symbols (Ortner 1973), the criterion of repetition in many different contexts can define key cultural goods, then Timling (and more general Tamang) culture is characterized by an overarching ethic of exchange and reciprocity (March 1983; Holmberg 1989; Fricke 1990a). The theme emerges in daily activity, in myth, and in ritual; it is a defining good in the practice of marriage. In daily life, an example is the nearly

inescapable sharing of food that marks each social encounter. Walk into even the poorest household, and the first offering after being seated near the hearth will be from the cooking pot of boiled potatoes or porridge, depending on what food is in season. If there is beer, it is immediately offered. The offering and acceptance of vegetable food and beer, the staples of local life, connote a common identity among the sharers. As Timling people express it, they are of one stomach.

In our recent 1993 collection of taped discursive interviews in Timling, we asked our informants what sort of character or habits they looked for in a good spouse. The first response was usually that he or she should have 'good' habits and character. To a Tamang, it was already understood what this implied, but elaborations for the anthropologist on the meaning of 'good' nearly always included a reference to knowing how to give, and actually giving, food to visitors to the household, as in the following translated excerpt from a taped interview with a 34-year-old man:

For me, I want a girl who has good habits and character. . . . And these are: when other people come to visit she has to give them some food and other things, or when children or people from this village need something like liquor or beer, she has to give that to them. Or if there isn't any liquor or beer, then she should roast some corn and give it. That sort of habit is what I mean by good.

Giving carries no threat of diminishment. Even more, giving food is itself a requisite of abundance, a view that finds ratification both in mythic themes and in practice. Thus, Holmberg (1989: 53) recounts a myth in which the sharing of a tiny bird snared in hunting results in the redoubling of its meat to an extent requiring two people to carry it on a pole between them. Variants of this myth are widespread throughout the Tamang area. Similarly, when a group of households has purchased an animal for slaughter, any person who comes later and requests to be included in the subscription is automatically given a share of meat. There is always enough.

Underscoring the centrality of these core social values are the sanctions levied against those who violate the ethic of sharing. The failure to give without obvious calculation from the produce of one's hearth is the source of accusations of greed. Such accusations are directed against any household and its members in which whatever food or drink is present is not shared with a visitor. They are also directed against one's own family members who fail to give labour or service where they are expected to do so. Those who flout the requirements of reciprocity are subject to accusations of witchcraft and more serious breaks with social networks.

Marriage as practice

If any set of associated practices can be said to embody the cultural good of reciprocity, it is those that define Timling's culture of marriage.

From the kinship structure of marriage itself down through the labour and ritual exchanges organized by marriage, the common thread running through relationships is that of reciprocity. At the kinship level, the Tamang practice of bilateral cross-cousin marriage structures exchange relationships between joined families and larger units. Ideally, the exchange of daughters continues through successive generations, but even marriage between unrelated men and women is regarded as opening up new alliances and the expectation of future relationships marked by the exchange of daughters.

Marriages are expected to involve individuals and their closest kin in relationships of specific obligation throughout the life of the union. The key obligations established or ratified by any single Timling marriage involve a central wife-receiver and those classified as his wife's fathers¹³ and his wife's brothers. This is an obligation of debt entered into by virtue of having taken a woman from their household and, by extension, from their patriline. Wife-receivers are expected to provide labour and services throughout the seasonal round as well as at specified ritual occasions, most dramatically at the funerals of members of their wife-giving households. Of course, these primary units of relationship do not exist in isolation. Nearly every wife-receiver will in turn have a wife-receiver beholden to him if he has consanguineal kin classified as sister or daughter.

Such structured obligations are consistent with the full range of cross-cousin marriage societies addressed in the ethnographic literature (Leach 1961; Levi-Strauss 1969; Barnard and Good 1984). Within the Tamang system of preferred bilateral cross-cousin marriage, ideally realized, they create at minimum an oscillating equilibrium across generations in which the overall relationship between patrilines is balanced. The people of Timling phrase their preferences quite explicitly in terms of a son having first claim to his father's sister's daughter. The logic of repeated marriages of this type would result in a balanced reciprocity of obligation for members of two families in the same generation; the values of acquired labour therefore redound only to the senior generation, since a man and his wife's brothers break even in the exchange of classificatory sisters.¹⁴

That marriage structures a variety of real labour exchanges and other co-operative efforts in Timling is revealed by the behavioural evidence we gathered in 1987–8 fieldwork. Among our data collection techniques was administration of a lengthy questionnaire to all community residents aged 12 and above (Axinn *et al.* 1991). Among the questions asked to the 185 ever-married women of Timling was whether or not their husbands provided free labour to their natal families in the first year after marriage. A majority (69 per cent) reported that they had.

This labour can include a wide range of activities, from chopping and hauling firewood or hauling loads to the full complement of agricultural

and pastoral tasks. In the past, one powerful village leader was able to use affinal labour in the salt trade with Tibet (Fricke 1990a). Others used it to clear new arable land from the forest. In another task we discovered that, of 55 householders who built their own dwellings in Timling, 67 per cent reported receiving help from their affinal kin and only a quarter of these reported payment in cash. Finally, when we gathered lists of names of people living in other households who had helped in the agricultural harvests of the previous twelve months, 25 per cent of the first three names mentioned were of affinal kin. An additional 35 per cent of these names were of consanguineally related women, a majority of whom were already married and resident in their husbands' households and, therefore, represented in some sense a contribution from affinal families.¹⁵

The person and the group

Alan Macfarlane draws attention to the relevance of cultural notions of personhood in marriage systems, while others suggest that notions of selfhood are key elements of cultural morality and the evaluation of responsibility (MacIntyre 1984; Taylor 1989). Anthropologists exploring selfhood have often contrasted the individualism of Euro-American societies with more categorical understandings of the self in other settings. Those working in South Asia have been particularly insistent that individual and group identity are merged in these areas. Ernestine McHugh (1989), in her work with the Himalayan Gurung, suggests that such dichotomies obscure the existence of multiple dimensions of identity in these contexts. She argues that the Gurung recognize elements of both group identity and the autonomous individual in their conceptions of personhood: a kind of 'middling' case, as Macfarlane (1976) has suggested on other grounds.

Tamang notions of personhood are closely related to those of the Gurung as well as to the range of Tibeto-Burmese societies throughout the Himalaya (Levine 1981). Important to the argument here is the Tamang cultural theory that each individual is created by contributions of necessary substance from both clans united by marriage. A mother contributes flesh, and the father contributes bone, to the substance of each person at birth. These notions are again widely shared across a range of societies (Levine 1981); Levi-Strauss (1969: 393) has argued that the presence of this cultural theory is closely associated with particular forms of cross-cousin marriage.

From the point of view of identity, the important point is the cultural recognition that each person receives essential substances from each side of the alliance constituted by parental marriage. This ideology underwrites a pattern of emphasis in genealogies that include both maternal and paternal lines. It is also an important element in a woman's retention

of her natal clan identity even after marriage and in the extraordinarily tight bonds between male and female siblings, all patterns that have been found to varying extents for other alliance settings (Macfarlane 1976; Acharya and Bennett 1981; Ahearn 1994).¹⁶ Married women, in this context, take on a symbolic role which embodies the marriage alliance itself (March 1983; Fricke *et al.* 1993).

The bounds of groups that enter into alliance at marriage follow the contours of patrilineal organization for the Tamang. A good indicator of their boundaries is found in the people who are important in the marriage process itself as well as in other life-cycle rituals. These people are the same people who incur obligation and suffer sanctions in the event of transgressions. The extent of these boundaries is currently under severe pressure in Timling, as discussed below. But in ideal discussions of marriage there is a tendency to include a patrilineal group of from two to three generations' depth as the primary actors in a marriage. Thus, prestations in an ideal (or 'good') arranged marriage are generally made to a woman's parents and to the brothers of her father in seeking their permissions for a woman. These families are not coresident but usually reside in patrilineally defined neighbourhoods of adjoining structures.

The words of a Tamang man make clear the importance of assent from a large group of kin in the process of a formal, a good, marriage:

[The second prestation of liquor and beer] is called *pong shiba*. And the first is *shyalgar*. . . . For the one called *shyalgar*, it's not necessary to gather together our lineage brothers. One house or maybe two households only do you need to gather together. Those that are nearby.

So the *shyalgar* is the first . . . And then later there is a large *pong* [flask] brought. At the time that the leg of meat is brought, however many lineage brothers we have, each of them must be gathered and given a small share.

They talk about whether [the marriage] should or shouldn't happen.

On that day . . . the girl is not taken. On that day the words [of marriage] are made strong and formalized. So, on that day they talk about how to go about it [make arrangements] and they ask all the *pong* consuming members of the girl's natal family [extended kin], 'Should they drink the *pong* or not?' And if along with everybody else there is agreement to the marriage, then they drink. And if there's not, then they say 'Return to your home, we will not drink this *pong*.' Two or three things need to be considered. For instance, suppose they say 'yes' and drink and what if the girl herself does not drink—they need to think, 'Maybe this girl is against the marriage, so we ourselves cannot drink.' And then they would have to pay a penalty, 1,000 rupees.

Well, then you are bound. [And to do otherwise] would be to make things bad for your patriline brothers. After doing that, it's finished—done. I will then take your daughter into my care. Whether I die or whether I live, it's bigger than me. On that day, she's in the care of others—just like that.

Markers of practice

These behaviours are themselves enactments of cultural goods and, as such, bear meaning beyond the merely instrumental:

We cannot, that is to say, characterize behavior independently of intentions, and we cannot characterize intentions independently of the settings which make those intentions intelligible both to agents themselves and to others. (MacIntyre 1984: 206)

There is no such thing as 'behavior', to be identified prior to and independently of intentions, beliefs, and settings. (MacIntyre 1984: 208)

This makes it possible to identify behaviours within a practice such that these behaviours become indicators of adherence to a cultural morality. It helps, too, if the members of a group use these indicators to define excellence in a practice.

For the people of Timling certain behaviours tied to marriage fulfil this role exactly.¹⁷ Just as our informants responded that they be 'good' when asked to characterize the desirable habits of a spouse, people in Timling also referred often to 'a good marriage' when speaking of their own or other people's marriages. When asked to elaborate on the meaning of 'good', they spoke of elements of the marriage revolving around parental choice of spouse, the exchange of ritual flasks of alcohol called *pong* (described at length above), and cousin marriage. Similarly, a good marriage would include the practice of indirect dowry, a category of transaction in which the groom or his immediate family present money or gifts to a bride's parents, who then pass a substantial portion of these prestations on to their daughter. All of these practices ratify the good of reciprocity and exchange, symbolically buttressing this moral good among the Tamang. Other practices surrounding marriage also contribute to its evaluated excellence. In addition to indirect dowry, the Tamang practice a form of female inheritance, called *djo*, in which movable property passes from mother to daughter at or shortly after marriage.

Marriage signifies the establishment, or re-creation, of alliances between families. Because of the Tamang classificatory kin terminology, cross-cousin marriage may refer to marriages between people more diffusely related than as first cousins. While all marriage constitutes an alliance in Timling, marriage between first cousins is much more direct in the sense of ratifying the close ties between actual brothers and sisters through the marriage of their sons and daughters. Another element of this connection between families is the practice of brideservice, already described above. Divorce, of course, is related to these practices in that it severs relationships of reciprocity.

A final behaviour has a more complex relationship with these issues because it ties into Tamang conceptions of personal identity for women.

TABLE 9.1 First Marriage Practice by Choice of Spouse among Ever-Married Timling Women (%)

Spouse choice	Senior	Joint	Self	Total
Number of women	73	56	56	185
<i>Pong</i> exchange	92	39	18	54
Cross-cousin marriage	84	71	52	70
First cousin marriage	38	34	4	26
Indirect dowry	68	38	29	47
Receipt of <i>djo</i>	60	36	50	50
Natal visits	25	46	59	42
Brideservice	70	64	73	69
Divorce	30	25	25	27

Among the Tamang, as among other societies in which cross-cousin marriage is a central practice (Dyson and Moore 1983), married women make frequent visits to their natal homes. This practice has obvious implications for the ties between households, the status of women, and the nature of the marriage relationship itself (Fricke *et al.* 1993). In addition, it relates to women's identity as continuing members of their natal families and clans even after marriage, and symbolizes the dual emphasis on the descent and alliance ideologies that coexist within Tamang culture.

To show how these practices relate to the interests of the primary decision-makers in the choice of spouse, Table 9.1 presents percentages of women's first marriages in which these practices were carried out by whether or not their husbands were chosen entirely by senior members in their families, were chosen jointly by a daughter and her seniors, or were chosen entirely by a woman herself. In this table we can see the strong association of senior choice of spouse and many practices associated with reciprocity. *Pong* exchange is particularly notable here, as are the practices of cross-cousin marriage and indirect dowry. When the choice of spouse reflects senior interest, either through involving seniors alone or in a joint decision, the direct alliance between families embodied in cross-cousin marriage is strikingly higher than when daughters make their own decisions.

Receipt of inheritance (*djo*) is only slightly higher for senior-choice marriages than for daughter-choice marriages for reasons that probably have to do with the practice of daughters themselves contributing to this fund when they pass earnings on to their mothers. Since independent daughters are more likely than others to have worked at wage labour, they are also more likely to have contributed to this fund.

The general pattern is for those practices that contribute to the alliance and reciprocity dimensions of marriage to be more highly engaged in if seniors are involved in the choice of spouse. But even when daughters choose, there continue to be generally high levels of practices embodying

this good, as can be seen with cross-cousin marriage and brideservice. One interesting pattern that diverges from the rest is higher percentage of natal home visits when a daughter is involved in spouse choice.

Marriage Change and Moral Change

Caldwell has characterized a portion of the change occurring in demographic transition in terms of emotional nucleation, a narrowing of interests, loyalties, and obligations from more distant, largely generationally defined, family members. He is particularly concerned with the narrowing of emotional bonds within the patrilineal family in the direction of the conjugal pair. But narrowing is a process that can transcend these bounds, and, in alliance societies of the kind that Timling exemplifies, initial transformations may occur within much wider networks. The evidence for such transformation is quite strong for Timling, as the cohort trends in Table 9.2 indicate.¹⁸

Shifting practices

In many of the key practices surrounding marriage, we can see evidence of substantial decline. Seniors are much less likely to be involved in the choice of spouse, suggesting that their interests are less often reflected in the marital decision. This is consistent with the models of nucleation stressed in Caldwell's transition model. At the same time, the practices that ratify alliance are decreasing. *Pong* exchange has declined. There is evidence of at least a slight decline in the practice of marriage to first cousins; these marriages represent the most direct exchanges across generations. Indirect dowry has declined. Brideservice is in decline. Divorce appears to be on a dramatic upswing, especially when the marriage cohorts are looked at; these are probably better indicators since many of the marriages in the youngest birth cohort are still new and have been subject to the risk of divorce for shorter periods.

Where the trends are more mixed or less dramatic, as with all categorical cross-cousin marriages, other factors tend to make the practices less solid indicators of commitment to the cultural good of reciprocity. Thus, the classificatory nature of the kinship system means that large portions of the available population for marriage will be classified as cross-cousin at some degree of distance. High levels of village endogamy assure that high percentages of marriages will be with cross-cousins at some degree of kinship relation. Similarly, the receipt of *djo* is somewhat ambiguous, since women contribute to their own *djo* by turning earnings over to their mothers; we might expect *djo* transfers to be affected by the increasing propensity of daughters to gain employment in the wage labour economy outside of the village.

TABLE 9.2 Birth and Marriage Cohort Changes in First Marriage Practice among Ever-Married Timling Women (%)

<i>(a) Birth cohort</i>				
Birth cohort	<1946	1946-65	1966-75	Total
Number of women	76	82	27	185
Who chose spouse				
Entirely senior	50	34	26	40
Together	32	29	30	30
Respondent alone	18	37	44	30
<i>Pong</i> exchange	63	48	44	54
Cross-cousin marriage	72	69	67	70
First cousin marriage	32	21	30	26
Indirect dowry	57	43	33	47
Receipt of <i>djo</i>	54	49	41	50
Natal visits	33	46	52	42
Brideservice	82	63	52	69
Divorce	14	38	30	27
<i>(b) Marriage cohort</i>				
Marriage cohort	<1960	1961-74	<1975	Total
Number of women	61	44	80	185
Who chose spouse				
Entirely senior	49	41	31	40
Together	36	18	33	30
Respondent alone	14	41	36	30
<i>Pong</i> exchange	66	50	46	54
Cross-cousin marriage	70	70	70	70
First cousin marriage	31	25	24	26
Indirect dowry	61	39	41	47
Receipt of <i>djo</i>	49	61	44	50
Natal visits	30	50	46	42
Brideservice	80	73	59	69
Divorce	13	34	34	27

To the extent that these practices, as MacIntyre argues, embody commitment to culture-based moral goods, these trends suggest a real transformation of the moral world of Timling. But the story is more complicated than a simple linear transformation from a wider to a narrower net of interests, and this is where the cultural notions of personhood become important to interpretation.

Shifting loyalties

Charles Taylor (1989) has argued that, for Euro-American contexts, the transitions towards an emphasis on the autonomous individual were

marked not so much by the introduction of entirely new ideas as by a reconfiguration of the relative stress placed on already existing cultural themes. In an earlier interpretation of the initiation of family planning in Timling (Fricke 1997), I have addressed the puzzle for contemporary transition theory presented by the fact that, among the first contraceptors in the village, all men who received vasectomies were not innovators in any other relevant behaviour. Compared with men within the same age group and with the same numbers of children, their practice was consistently characterized by adherence to the general models of the good discussed above. I suggested in that paper that their motivations involved a reconfiguring of already present themes in Tamang cultural models rather than the creation of something entirely new under the sun. The processes occurring in marriage and associated practices are similar.

For Timling, as argued above, the identity of persons already included elements of individual autonomy and membership in the natal clan as well as an emphasis on affinal relations. The change towards increased natal home visits by women after marriage needs interpretation in this light. Dyson and Moore (1983) have suggested that contacts such as these are important indicators of women's autonomy, and my colleagues and I have been motivated by that argument in one of our own analyses (Fricke *et al.* 1993). Within the larger structure of Timling's cultural models, however, these increased natal visits represent a new balance between women's retention of their natal home identities and their symbolization of the links between households. Their enhanced level of contact with their natal kin suggests a new stress on their natal identity that is simultaneously a de-emphasis of the alliance practices ratifying the cultural good of reciprocity—in effect, behavioural evidence of a change in the notion of personhood.

That this is a process still playing itself out is indicated by other evidence for change in Timling's social and moral boundaries. I suggested above, for example, that group boundaries were identifiable by the collection of relatives who were involved in the marital process in the 'good' marriage. This group overlaps with those who are subject to sanction in the event of transgressions of rules of conduct. Some of the negotiations of those bounds occurring today in Timling are linked to women's actions.

Thus, in the 1987–8 field period I witnessed a lively discussion brought about by a pregnant woman's return to her natal home where she gave birth in contravention of Timling practice. While all agreed that a spiritual pollution of the natal group had occurred, the boundedness of that pollution was in dispute. When one man offered another a prestation of beer, it was refused on the grounds that the offerer's entire patriline was polluted and not yet purified. The offerer denied his pollution, arguing that since the birth had occurred in his brother's household and not in anybody else's, the pollution was confined to that narrow group of kin.

This resulted in an argument, left unresolved, in which young and old took different sides on the extent of this spiritual pollution.

Nucleation

While I argue that, in a setting such as Timling's with its stress on affinal relations and the importance of marriage practice to the reproduction of cultural goods, these changes were necessary preconditions for further changes towards demographic transition, this does not mean that transformations more familiar to Caldwell's readers are not also important. In ongoing analyses of transcript data from discussions of marriage practice in Timling, my colleagues and I have noticed provocative shifts in the discussion of marriage in Timling. For example, I quoted a woman above who commented in 1981 on the values of children for tying households together. But even this discussion was embedded within the expectation that children would provide for parents in old age and diversify the household labour force before then.

Interviews from 1993 brought many of the same themes to the fore. A majority of informants even mentioned the labour and social security values of children as reason enough for early marriage. But themes appearing only in the interviews with men and women under 30 began to introduce new sentiments. For the first time, people in Timling were mentioning the obligations to children as a reason for delaying marriages:

Well, that's [before the early 20s] a bit young [for a boy] to get married. And if babies come he won't be able to earn enough. He needs to give his babies food and he needs to give them clothing. If he waits until he has matured before marrying, if he waits until he has earned money before marrying, then things will be better for the babies, don't you think?

You see, if he's earned money before and then has children, he'll be able to send them to school for an education. He'll be able to give them good food and nice clothes and other things. If an earning through wage labour can't be had and he gets married, then he is committing a kind of sin against his children.

At the same time, younger informants focus more emphatically on the husband's responsibility to provide for his wife, in addition to his children, with a decreasing emphasis on the responsibilities towards his affines.¹⁹

SOME IMPLICATIONS

Lengthy as this discussion has been, it remains just a sketch of the processes of moral and demographic transition that characterize Timling. It is clearly 'anthropological' if by that we mean the distance it has gone

from standard demographic questions. Yet I claim demographic relevance for the issues it raises. I suggest that it continues the spirit of Jack Caldwell's original insight that we should pay closer attention to the specific organization of societies whose demographic processes we hope to understand.

The paper differs somewhat from Caldwell's approach in at least two ways: (1) its argument begins with cultural models of kinship before circumscribing the range of relevant actors in Timling's familial system; and (2) its approach to familial morality is in terms of cultural structures of motivation and cultural images of the good.

In defining relevant actors, more than a little evidence suggests that the cast of characters important in Timling may be important in a wide range of other settings. What little we know of the processes of familial transition in societies where cross-cousin marriages were important organizational features in the past suggests that similar changes in the relations between affines are occurring. Ahearn's (1994) work among the Magar and Macfarlane's (1976) work among the Gurung both suggest transitions of a similar sort. Caldwell's own work in South India (Caldwell *et al.* 1988b) alludes to transitions in the structure of marital alliance that antedate some of the intergenerational changes he focuses on.

Even without appeals to culture and motivation, the importance of kinship and familial structures is an enlargement of the demographic enterprise in that it draws attention to the behaviour of procreating couples in social and institutional contexts (McNicoll 1978, 1980). While the number of family and kinship systems defined in these terms is small, it is clearly more varied than the received models which appear to place more-or-less nuclear family systems in opposition to 'extended family systems'. One implication of this paper is that those extended systems require unpacking into relevant subtypes.

Such attention to variations in the identity of relevant kin has practical advantages in, for example, tests of wealth flows theory. Within the range of societies conforming in some respects to alliance models, attention to affinal actors and to the continuing relationships of exchange that occur between families after daughters leave the home are crucial to these tests. Two elements of that theory and its reception are important here. The first is Caldwell's definition of wealth, which is strikingly anthropological in its application to a variety of settings, and the second is the tendency to discuss these flows as though they occur only for intergenerationally connected kin.

Criticisms of the wealth flows theory have generally confined themselves to empirical arguments centring on the first component, which ties the flow of wealth to the rationality of high or low fertility. That point is actively contested, although a good deal of confusion turns on a misunderstanding of the breadth of the Caldwell definition, which necessitates

an empirical examination of its localized meaning in each new setting. As I have noted elsewhere (Fricke 1990b: 112), his writing is unambiguously inclusive. Guarantees, safety, the pleasures of organizing family activities, and promises of future activities are all included, in addition to actual monetary or labour transfers that can occur in the short term.²⁰

On the second component, there is a curious tendency to truncate the measurement of flows to a point when children leave the household or to limit the discussion of intergenerational flows to one's own children. This is bad enough in any society having one variety or another of classificatory kinship. Its impact is even more limiting in societies where affinal relationships are central, as among the Tamang, where it ignores the contributions from affinal kin. Moreover, as Greenhalgh (1990, 1995) persuasively argues, capturing the whole historical process of transition is critical to the understanding of all contemporary patterns. This means that the definition of affinal contributions can include more than that of a daughter's husband or even his closest kin. A single marriage may unite groups at the patriline level or not, but these are empirical issues to be ascertained anew in each instance and for antecedent historical periods. History does not necessarily open with systems that emphasize vertical relations between generations; such contemporary patterns may constitute the outcome of an earlier narrowing of affinal responsibilities.

While these are important implications of my argument, they are only minor extensions of existing directions in demographic research. More controversial, although closely connected to the definition of relevant familial actors, is the point that the study of demographic transitions looks for culture-specific theories of motivation. This has received recent attention from some (Santow and Bracher 1994; McDonald 1994), although in the context of motivational structures that are still fairly close to the family. The argument here is, again, similar to Greenhalgh's (1988). The childbearing practices of demographic interest are embedded within motivational systems in which childbearing is not always an end in itself. Yet, knowing what other ends are available to cultural actors may, nevertheless, have importance for uncovering variables, in the form of practices, relevant to demographic processes. I argue that these alternative ends are less easily discovered if we begin with childbearing and work upward through the levels of social structure and culture. Instead, a fully contextualized understanding of demographic process requires that we begin with a search for the more general motivations of actors, and this means an analysis of their moral systems in terms of internalized cultural patterns.

In the case of Timling, general notions of cultural good lead quickly to marriage as a set of practices (practices as defined by MacIntyre, 1984). These practices, as behaviours, may be more general but their cultural meanings are likely to be location-specific. Thus, the choice of whether

or not to include them in demographic analysis depends on the empirical context of each case. For Timling, cross-cousin marriage, marriage prestations, and the provision of brideservice have been shown to have important demographic implications in analyses cited in this discussion. Elsewhere, they may not.

Greenhalgh's approach to culture demands that it be taken in its own terms before developing hypotheses of demographic relevance:

In my reading of the demographic literature, where culture is not simply 'everything else', it tends to be seen as something concrete and fixed, something that, like education or occupation, once correctly described and measured, can be added to the list of determinants and called upon whenever an explanation of unusual behavior is needed. In my view culture does not belong on the list of determinants, because it is qualitatively different from the other factors on that list. . . . Culture is thus highly variable, capable of taking different forms through different recombinations of its constituting elements; it is historically contingent, not easily caught because it is always in process. At the same time, however, it plays a crucial role in demographic behavior, and for this reason deserves more sustained attention than it now receives. (Greenhalgh 1988: 668)

The argument in this paper is consistent with this approach. It exemplifies a cultural analysis that can open up, for demographers, the concrete practices in a local setting which are demographically relevant and which are presented by the culture itself rather than by an already existing list of variables lifted from other settings. At the same time, it suggests the possibility that structural systems in which affinal relations are stressed may require an expansion of our conceptualization of general processes such as emotional nucleation and changes in familial morality.

NOTES

1. For examples of Caldwell's work in methodology, see Caldwell (1985) and the volume edited by Caldwell *et al.* (1988a); important theoretical and substantive statements appear in Caldwell (1982); see Caldwell *et al.* (1988b) for an extended study relating all three domains.
2. It is important to note that demographers other than Caldwell have also moved beyond models that focus overwhelmingly on individual-level mechanisms. Santow and Bracher (1994), for example, write of the power of cultural symbols such as idealized notions of the family in motivating behaviour; and Geoffrey McNicoll's (1978, 1980) work has long called for attention to the structural and institutional correlates of demographic behaviour.
3. Greenhalgh's discussion parallels movements internal to the demographic community which stress renewed attention to cultural systems and elements

of meaning in the understanding of fertility transition. But Greenhalgh goes further in suggesting that culture is not static and fixed, but rather 'highly variable, capable of taking different forms through different combinations of its constituting elements . . . [and] historically contingent, not easily caught because it is always in process' (Greenhalgh 1988: 668). She concludes that research needs to look beyond the family unit to larger levels of context in order to understand the motivations for bearing children in any setting.

4. One striking example of the failure to consider these systems as distinct is in Caldwell's own work in South India, one of the canonical sites for their depiction in the anthropological literature (Dumont 1957). Although acknowledging certain features of the alliance system, especially those that have been transformed in recent years (Caldwell *et al.* 1988b: 85–8), Caldwell and his colleagues do not take this supra-household kin context as a central organizing principle in the society.
5. For interesting demographic exceptions that treat the motivational elements of culturally informed moral images, see the recent work of Santow and Bracher (1994) and McDonald (1994).
6. Regardless of where it is found. See David Schneider's discussion of *American Kinship* (1968) and Carl Schneider's discussion of the moral assumptions underlying American family and marriage law (1985; 1994).
7. For discussions of culturally variable meanings of 'person', see Fruzzetti *et al.* (1982), McHugh (1989), Taylor (1989), and the essays in Carrithers *et al.* (1985). Discussions often contrast the atomistic individual of Euro-American cultures with the collapsing of individual and group identities elsewhere (Fruzzetti *et al.* 1982), but McHugh (1989) shows how a culture—in this case, Himalayan—can incorporate both dimensions.
8. Hammel, for example, argues against the very search for culture-based motivation that informs this paper (Hammel and Friou 1996).
9. I emphasize that this autonomy is *partial*. Wuthnow (1987) and others (Alexander 1988; Geertz 1973) make strong cases for the analysis of culture in non-reductive terms, but it is also clear that culture is complexly linked to subjective individual experience and, indeed, must be considered as such if any dynamic analysis is to make sense (Ortner 1984; Alexander 1988; Strauss 1992; D'Andrade 1992).
10. Firth (1964: 220–4) summarizes the different senses of value and norm while also trying to develop a useful categorization. See Hammel and Friou (1997) for a spirited argument against attempts to get into people's heads. For a discussion and critique of utilitarian and related movements in philosophy, see Taylor (1985a: 230–47).
11. Compare the MacIntyre and Flanagan points to Caldwell's account of the values of children in transitional societies. 'Disaggregation is a product of external observation or, even more significantly, of hindsight. In relatively unchanging societies no one sees the separate bonuses conferred by fertility. The society is made by a seamless cloth. . . . Indeed, the respondent's ability to see clearly the separate aspects of children's value shows that the old system is already crumbling and that children's roles are not as certain as before' (Caldwell 1976: 343).

12. Intensive data collection was carried out in Timling during 1981–2, 1987–8, 1991, and 1993 fieldwork. See Axinn *et al.* (1991) for a discussion of the general methodology, which compares it to Caldwell's well-known version of micro-demography.
13. Tamang kinship terminology groups people having different biological relationships into common categories. The person we refer to as father in English is referred to by the Tamang with the same term that is used for that person's actual brothers and patrilineally related male cousins. Similarly, the words used by Tamang for the people we call brother and sister include, on the paternal side, all those people we refer to as cousin. Individual Tamang may, of course, recognize the possibility of closer or more distant ties of affection and authority among people called by the same term. Indeed, changes in the bounds of groups having recognized rights and obligations is a central component of the Tamang version of the process of emotional nucleation that Caldwell makes a key to demographic transition.
14. For a demonstration of this among the Tamang, see discussions in Höfer (1969), Holmberg (1989), and Fricke (1990a). More general discussions are in Dumont (1957), Leach (1961), and Barnard and Good (1984).
15. These figures are reported in Fricke *et al.* (1991). As a comparison with another project fieldsite, much more monetized and considerably closer to Nepal's major urban area of Kathmandu, the figures for help in agricultural harvest in the previous 12 months included 15% affinally related people and 17% consanguineally related women.
16. Interestingly, the pattern is absent in many societies that follow classic descent models more closely, as in the North Indian system described by Dyson and Moore (1983). These descent models are the implicit stereotype for much of the demographic image of pre-transition settings—a point that relates to Arland Thornton's (1992) critique of contemporary models of family and demographic transition.
17. For more elaborate discussions of the practices described below, see Fricke (1990a, 1997), Fricke *et al.* (1993), and Dahal *et al.* (1996). Discussions of their demographic relevance in Timling may be found in Fricke and Teachman (1993), Dahal *et al.* (1993), and Fricke (1995).
18. Table 9.2 provides cohort trends for both birth and marriage cohorts. Because these data are for ever-married women, they are subject to truncation bias, particularly in the last birth cohort where large numbers of women remain unmarried. For a complete discussion of the issue, see methodological app. B in Thornton and Lin (1994: 419–24).
19. Most of this paper has been concerned with establishing a framework, and the example of Timling is presented in descriptive rather than causal terms. The mention of earning wages by informants points to potential causes for the destabilization of Timling's morality of kinship, some of which lie in the nature of capitalization. See Caldwell (1982: 353–69).
20. See Fricke (1990b) and Turke (1991) for an exchange on this issue. One argument is that easily measured wealth allows for better falsified hypotheses (Kaplan 1994). It does at that, but see Taylor (1985b, 1993) for relevant reflections on the tyranny of epistemology in social research. An overweening concern for falsifiability runs the risk of losing touch with social reality.

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Orderly Theories, Disorderly Women

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One of the themes of feminist studies in a variety of fields is the issue of male control over females, particularly over their productive and reproductive labour. Two widespread social changes—the spread of money and the spread of new ideas about fertility regulation and modern contraceptive techniques—are, we suggest, subversive of this control, and have the potential to destabilize the gender balance of power.

In this paper we examine the interaction of global social change and gender in the context of South Nyanza District, Kenya. As the Luo in this area are described by anthropologists and by the men and women currently living there, a central cultural logic links lineage, bridewealth, polygyny, women, and children. Through the exchange of bridewealth for wives, men acquire control over women who produce the children upon which the patrilineal system is predicated. Both money and modern contraceptives permit wives to challenge their husbands' control: money may be hidden, and modern contraceptives used secretly. From the perspective of the men in South Nyanza, the first challenge has been successfully met, at least temporarily, but the second has not. We propose that the difference is due to the role of outside actors: the Kenyan government and international organizations. Outside actors attempted to influence both of these processes: 'women in development' programmes aimed at integrating women into development agendas, and family planning programmes aimed at integrating women into population control agendas.

The study of Kenyan women upon which this paper is based was done in collaboration with Alan Ferguson of GTZ/Ministry of Health, and with Charles Onoka of Innovative Communication Systems, both of Kenya. We were especially fortunate to have a superb survey team: Francis Ayuka, Marcellus Ayoma, Phoebe Ogolla, Rena Otieno, and Teresa Akoth. We are grateful to Steven Green for conversations about his parallel study of men and permission to cite from his interviews; to Teresa Akoth and Rena Otieno for stimulating discussions in the course of preparing this paper; to Akin Bankole, Caroline Bledsoe, Pierre Ngom, and Elisha Renne for useful comments; and to the members of the graduate seminar in Population Processes in the Department of Anthropology at the Graduate Center of the City University of New York, an opportunity provided by a Mellon Foundation grant to CUNY. We are also grateful for funding from the Mellon Foundation to the University of Pennsylvania for preliminary work by Watkins, and for funding from USAID (the EVALUATION Project, Contract no. DPE-3060-C-00-1504-00) to Naomi Rutenberg and Susan Watkins.

The first was ineffective in South Nyanza; the second has been quite effective.

After setting the stage by describing the control of women in demographic and anthropological theories, we briefly describe our data and methods, the economic characteristics of the area, and the extent of contraceptive use there. We then consider the ways in which opportunities offered by economic development and family planning programmes permit women to evade male control, and men's reactions to this threat.

THE ORDERLY THEORIES OF DEMOGRAPHERS AND ANTHROPOLOGISTS

The theories of demographers are based on expectations of behaviour that differs by gender, and they assume differential power within the family (for a review, see Watkins 1993). In the demographic 'state of nature'—perhaps equivalent to the anthropologist's 'primitive society'—women are firmly located in the domestic sphere, where they produce, or do not produce, the births that make the difference in fertility levels. In the home, they are subject to the authority of their husbands and, especially in societies outside of Western Europe and countries of European settlement, to the authority of their parents-in-law as well (Caldwell 1982).

In some theories of fertility transition, it is the forces of modernization that disrupt this domestic order (Notestein 1953). The theories are often phrased in terms of 'individuals' or 'couples', and the forces of progress are impersonal: modernization, education, declining mortality, etc. Yet the empirical tests of these theories expose gendered assumptions (Watkins 1993). Virtually all the data describe women, whereas men are shadowy figures. Both men and women are assumed to be attracted by opportunities for leaving home—opportunities offered by schooling, by jobs in the paid labour force, or by the bright lights of the city—but men are assumed to continue to bring home the bacon whereas women are expected to diminish their commitment to childbearing. Women are thus portrayed as both weak and powerful: weak enough so that even images of a different life displayed in the cinema can seduce them into defaulting on their primary traditional responsibilities (Hogan and Frenzen 1981), but powerful enough to evade the control of the patriarch.

In the theories of fertility transition based on neoclassical economics, men remain more firmly in control. (For a review of these theories, see Pollak and Watkins 1993; for feminist readings of these theories, see Ferber and Nelson 1993.) In Gary Becker's (1981/1991) *New Home Economics*, although it is an androgynous altruist who oversees the production of household goods, including children, the CEO of the family firm is clearly male. Assumed to be acting as an enlightened despot who has the best

interests of his dependents at heart, he calculates the costs and benefits of children in terms of the opportunity costs of his wife's labour. When these calculations show that it would be economically efficient to keep his wife at home, he does so; when they show that it would be economically efficient for her to work outside the home and have fewer children, he sends her out to work.

Population policies and family planning programmes are at least as gendered as demographers' theories. (For a subtle analysis, see Greenhalgh's (1995) analysis of China's birth-planning policies.) Population policies often use the gender-neutral neo-Malthusian language of population and resources, and family planning programmes talk of 'couple-years of protection', but women are explicitly targeted. With the exception of condoms and vasectomies, the available clinical methods are female methods; family planning programmes are often integrated into maternal and child health programmes, and few if any programmes now require the consent of the husband for temporary methods of birth control.

In contrast to demographers' concern with women, anthropologists have focused primarily on males (H. L. Moore 1988). None the less, there are some similarities in the theoretical constructions of males and females. At least in the pre-modern societies that have been the focus of most ethnographic work, women are again presented as located in the domestic sphere, where they are under male control. Reviewing ethnographic studies, Ortner (1974) has argued that women are associated with the realm of nature, men with the realm of culture; the latter, associated with men, imposes order on the former, associated with women (see also Strathern 1980). Kuper (1988) traces the almost obsessive concern of anthropology since its foundation in the nineteenth century with the shift from 'primitive' societies to states. This is a problem of order: as H. L. Moore (1988: 130) describes the contributions of Fortes and Evans-Pritchard to this literature, it was 'to establish how societies without state institutions maintained social order. . . .' (see also S. F. Moore 1994: 70). Although governance is typically a male area in these non-state societies, women enter via kinship, one of the important mechanisms of governance.

Anthropological works on the Luo pay considerable attention to the issue of control over women, either explicitly, as in Parkin's (1978) discussion of the cultural logic of Luo society, or implicitly, as in Ocholla-Ayayo's (1976) work on ideology and ethics among the Southern Luo. Although the discussion below is based on ethnographies of the Luo, the third largest ethnic group in Kenya, many of the features of traditional Luo society are more general (Lesthaeghe 1980).¹ Like many other groups in sub-Saharan Africa, the Luo are a segmentary lineage society: they are patrilineal, patrilocal, polygynous, and patriarchal. In principle, the Luo can be traced to a single (male) ancestor, and all the (male) members of a village can trace their ancestry to a single nearer (male) relative. Marriage

is exogamous, and tracing descent to establish permitted or forbidden marriage is a favourite pastime of Luo (male) elders (Blount 1975; Parkin 1978). Multiple wives are a sign of higher status: although they require the payment of bridewealth, they return children.

Men are considered to control the major resources. Traditionally, these were cows, wives, and children. These are the elements of what Parkin (1978) calls the central cultural logic: the connection between lineage, polygyny, bridewealth, and control over women. The traditional paradigm in Luo culture 'summarily links together gerontocratic and genealogical authority as logically presupposing and presupposed by polygyny, valuable bridewealth in exchange for a wife's reproductive powers, and the preservation of the exogamic segmentary lineage structure' (Parkin 1978: 29). Although Parkin considers the number of children to be incidental, in the cultural logic that he describes children are the ultimate resource, and the more the better (see also Ocholla-Ayayo 1991). Cattle were used primarily as bridewealth, which legitimated control over the women who would produce the children that would perpetuate the husband's lineage.

According to Parkin, control over women is critical: the cultural logic would break down if women were to refuse to be exchanged for cows or to produce children. Ocholla-Ayayo does not make this point explicitly, but in his description of the cultural traditions of Kenyans in general (1991) and Luo in particular (1976) we see concerns over the control of women. They are taught to be respectful and submissive. For example, Ocholla-Ayayo lists many nicknames for boys, most of which connote strength or bravery, whereas the nicknames for girls stress gentleness and politeness (Ocholla-Ayayo 1976: 62). The main Luo concerns about wives appear to be their quarrelling and sexual looseness. Of the various types of quarrel, most attention is given to quarrels among women, provoked by envy, jealousy, accusations or counter-accusations, lies told about the other, accusations of witchcraft and sympathy, and 'love for the men' (Ocholla-Ayayo 1976: 95).

Despite the emphasis on control over women, there also appears to be some room for autonomy and some tolerance for unruliness. Women are raised to avoid confrontation, but the cultural training also provides opportunities for them to assert themselves. Thus, a woman is expected to agree to reasonable sexual demands of her husband, but 'she may also demand the same from her husband, though not directly' (Ocholla-Ayayo 1991: 126).² Girls are expected to be virgins at marriage and to be stigmatized by others if they are not. In some circumstances, they can be severely punished: 'an under-aged girl who tends to be somewhat promiscuous for her age, may be tied with her legs apart on the granary for the chickens to inflict pain on her genital organ' (Ocholla-Ayayo 1976: 63). Yet unmarried girls are apparently expected to have sex with their boyfriends, since

the girls are taught by a 'grandmother' how to have sex without becoming pregnant, and what to do if they do become pregnant (Ocholla Ayayo 1976: 143, 73).

In summary, our reading of the demographic and anthropological literature suggests the importance of the social control over women in theories in both disciplines. In some demographic theories control is disrupted by modernization, whereas in others men remain firmly in charge throughout the processes of social change. Anthropologists have written primarily about societies in which massive social change was not yet a challenge to male control. The ethnographic works on the Luo suggest the vulnerability of a central cultural logic—one that emphasizes a forward-looking lineage based on the links between bridewealth, polygyny, children, and the control of women—to social change. We turn now to our investigation in contemporary Kenya.

DATA AND METHODS

The data come from a larger project to examine the role of informal conversational networks in influencing ideas and behaviour about family size and contraceptive use (Watkins *et al.* 1995; a detailed description of the data and methods is in Watkins *et al.* 1996). The study was conducted in four rural communities (administratively known as sublocations) in a relatively remote part of south-western Kenya near Lake Victoria, an area inhabited by Luo.³ All of the communities are in Homa Bay District (formerly South Nyanza District, the term we retain here) which is in Nyanza Province. Our approach, a combination of semi-structured, in-depth, interviews, household survey, and participant observation, was pioneered in demography by the Caldwells (Caldwell 1985; see also Caldwell *et al.* 1988b).

The project had two phases. The first phase consisted of semi-structured interviews with forty women and forty men (ten in each of the four communities). In this phase the interviewers were university graduates born in Nyanza Province but living in Nairobi, and the respondents were women of reproductive age and their husbands.⁴ The respondents were selected systematically, and the interviews were conducted in June and July 1994 and were analysed using Ethnograph. This phase also included at least two focus groups with women in each community. The interviews and focus groups were taped and translated into English by the interviewers (who were also the focus group moderators), and were reviewed in the field by one of the principal investigators.⁵

In addition, we returned to one of the sites (Mfangano Island in Lake Victoria) in June 1995 in order to interview older women about disorderly women. We conducted nine interviews and three focus groups

with women over 60. These respondents were not selected systematically: we interviewed whomever we could find, sometimes following an interview guide and sometimes simply in casual conversation. In this revisit we also interviewed some older as well as younger men, and a few younger women on topics that had not been covered in detail the previous year.

In the second phase, we conducted a household survey of approximately 700 men and 850 women in the same four communities in December 1994 and January 1995. These respondents were selected by asking the clan elders to draw up a list of all the villages in each site and then to randomly select a number of villages from that list. The number of villages selected was based on estimates by the elders of the number of households in each village, and was meant to achieve 200 male and 200 female respondents in each site. The smallest site, on Mfangano Island, had only five villages: all were in our sample. We then interviewed all women of reproductive age and their husbands in the selected villages. In this phase, the interviews were conducted by teams of local interviewers selected at each site; they were secondary school graduates, and predominantly male.⁶ The household survey is the source of some of the descriptive statements below, but we draw primarily on the in-depth interviews of the first phase of our research.

We also draw here on participant observation: at least one of the principal investigators was present throughout all phases of the fieldwork (which lasted about five-and-a-half months), observing (including sitting in on some interviews and focus groups) and chatting with chiefs, nurses, and those residents who could speak English, or through an interviewer with those who could not.

It is difficult to summarize in-depth interviews as succinctly as quantitative data. We thus use quotations from the interviews as illustrations. The quotations are usually long, to give the reader a flavour of the responses and the extent to which the participants in the focus groups agree or disagree with each other. In addition, we think the long quotations facilitate achieving one of our aims, which is to provide the reader with insight into the experience of participants in major social changes. To compensate for the use of fewer but longer quotations, and to permit readers the opportunity to challenge our interpretations, transcripts are available from any of the authors, as are the data from the household survey.

ECONOMY AND FERTILITY

The four sites are quite similar in socio-economic circumstances, and for the purposes of this paper we do not distinguish among them. South

Nyanza is one of the less economically developed parts of Kenya. None of the four communities had electricity or piped water, roads were very bad and telephones few. (The economic characteristics of the area are described in Republic of Kenya, n.d.) The economy is primarily agricultural, with households depending on maize, grains (primarily millet and sorghum), and vegetables (e.g. cassava) grown in small plots. When asked what they do to earn money, 40 per cent of the women and 10 per cent of the men in the household survey said 'nothing', and 40 per cent of women and 16 per cent of men said 'small business'. (For women, 'small business' includes occupations like dressmaking, but is predominantly very small-scale resale.) Farm production is supplemented by money coming to households from some cash crops, from some wage labour by men (e.g. in fishing and in local stone quarries, either on a regular or an occasional basis), from small business, usually by women (e.g. buying bananas at a nearby market and reselling them locally), and from remittances, gifts, or loans from relatives working outside the area. The absence of economic opportunities in the area is demonstrated by the fact that even those who had finished secondary school were engaged in much the same activities as those who had not been to school.⁷ The Luo are considered by the current government to be in the political opposition, and they themselves attribute the lack of services and of 'the development of the community' (which is locally interpreted as meaning money from the government or international donors) in Nyanza Province to this political opposition (Goldenberg 1982).

Although some sublocations in Nyanza Province are quite heterogeneous (Cohen and Atieno Odhiambo 1989: 28) there is little evident economic differentiation within these four communities. Most live in mud huts with thatched roofs, although a minority have metal roofs, and the homes are very sparsely furnished (typically, a table and a few chairs or stools, and a few plastic containers for water). On the other hand, the residents do differentiate. When asked on the household survey whether their conversational partners were 'better off, worse off, or about the same' as themselves, the respondents answered the question and sometimes noted the grounds on which they made their answers: that so-and-so was better off because he had more land, or more cattle, or because she had a sofa-set, or a son with a regular salary.

The substantial fertility decline in Kenya at the national level has been uneven regionally (i.e. ethnically), and these areas showed higher fertility and lower proportions wanting no more children or using any method of contraception than did most other areas. Total fertility in Nyanza Province has fallen from 8.1 in the 1978/9 KFS (Kenya Fertility Survey) to 5.8 in the 1993 KDHS (Kenya Demographic and Health Survey), slightly higher than the 5.3 for all Kenya (Brass and Jolly 1993: 95–7, tables 5.2, 5.3; Kenya 1994). A third of the women interviewed in our household

survey wanted no more children, compared with 47 per cent in Kenya and 52 per cent in Nyanza Province from the KDHS (Kenya 1994). About 23 per cent of the women had ever used contraception and 12 per cent were currently using, compared with 13 per cent currently using in rural South Nyanza, 24 per cent in Nyanza Province, and 33 per cent nationally (Kenya 1994). The men on our household survey were less likely than women to say they wanted no more children (22.5 per cent), and about as likely to report ever-use of contraception (24.5 per cent); a higher proportion of men who reported ever-use reported current use than did women.⁸

Although these communities in South Nyanza are relatively remote, they are not isolated. Issues of what we referred to in the in-depth interviews as 'the goodness or badness of large or small families' and the use of 'family' are the topic of widespread conversations and sometimes intense debate among both men and women in these communities (Watkins *et al.* 1995). There is substantial overlap in the approach of men and women to these issues, but there are also differences. On the household survey, 47 per cent of the men but 33 per cent of the women said they wanted six or more children; correspondingly, more women than men said they wanted no more children (around 33 per cent of the women versus about 20 per cent of the men). Our impression from the in-depth interviews is that men reported more frequent conversations about family size and fewer about contraception, whereas women jumped more quickly from describing conversations about family size to conversations about the side effects of contraception and the opposition to using family planning by those with power over their lives, their husbands and their parents-in-law.

Women who were currently using contraception were asked whether their husband knew: 20 per cent said he did not.⁹ We suspect this is an underestimate of the extent of secret use. For the site where we interviewed all women of reproductive age (the sublocation of Wakula South on Mfangano Island), we examined the records at the clinic for oral pills and injections of Depo-Provera. Of the ten women on the clinic register whom we were able to locate in our survey, only five told the interviewer they were currently using contraception. (Presumably the others were keeping it a secret from their spouses as well.) In the in-depth interviews with forty women conducted in 1994, six (15 per cent) said that they were using secretly. At least twice as many (12, or 30 per cent) appeared to be prepared to use secretly in the future: they said that ultimately the decision to use family planning was the wife's.¹⁰ Some of these women may eventually persuade their husbands, or change their minds themselves; on the other hand, some women who insisted most strongly in the in-depth interviews that the decision was entirely up to the husband still had few children, and they may feel differently when they have more. The actual or future extent of secret use is probably less

significant, however, than the perception that women may act in this realm without their husband's knowledge or consent. Both men and women know others who are secret users: 31 per cent of the men and 40 per cent of the women on the household survey said they knew someone who was using secretly (with 4 per cent of the men and 2 per cent of the women uncertain). Thus, beyond the level of admitted secret use is also the perception by both men and women that it is widespread.

COWS, WOMEN, AND CHILDREN

It is useful to begin by establishing the extent to which these rural areas are similar to the picture presented by anthropologists of the Luo. In the household sample 35 per cent of the women lived in polygynous marriages.¹¹ A preliminary analysis of marriage distances using our household survey (A. Ferguson, personal communication) shows that most of the wives came from other areas in Nyanza, and thus share a similar cultural background. Compounds are ideally extended, with parents, their married sons, and their grandchildren sharing the same compound, and many were in fact extended: 14 per cent of the women in the household survey lived with at least one mother-in-law, and 47 per cent with at least one sister-in-law (i.e. with her husband's brother and his wife).

In the older generation, the logic linking cows, women, and children is much as it was described by Parkin (1978), and summarized above. The following exchange occurred during a focus group [UGFGOld.1] when the topic was the extent of women's control of resources.

FOCUS GROUP WOMAN: Sometimes we would get some animals but it would still be for the man.

FGW: It would be for the man and he would keep it.

MODERATOR: Even if it was you who brought it?

FGW: Yes, because he will just save it until it gives birth, then they become many, then he would pay bride price to get another wife.

FGW: So people would say he used his cows to get another wife.

MODERATOR: And you just allowed him to use your cows to get another wife?

FGW: Yes. [laughter from the room]

The equation of women with cows is particularly direct in another focus group [UGFGOld.2] of older women, in a section on infidelity: the 'noise' indicates that other women spoke up at that point, but the tape was not sufficiently clear to hear what they said.

MODERATOR: Nowadays, you find a lot of ladies and women 'moving around' [marital infidelity], was that there even a little a long time ago?

FGW: Long ago, if the elder women saw that you were capable of doing such a thing, they would call you and talk to you and teach, telling you that you should stay with just one person [noise]. They told us the only time you could

sleep with another [noise] man was if your husband was not able to make you pregnant.

MODERATOR: Did you agree with that?

FGWs: [Chorus] Yes!!

FGW: They told us that the husband we have, we must learn to love him and stay with him even when we have children [by another man].

MODERATOR: And once you got the baby of the other man, was it for your husband or the other man?

FGW: It is for your husband.

FGW: The other man is like a bull. For example, doesn't your cow wander and mate with another bull? When the cow gives birth, is its calf yours or for the owner of the bull?

FGWs: [Chorus] Yours, of course.

MODERATOR: In the past, how many children could people have?

FGW: You would just give birth.

FGW: You could just give birth to as many as you could, even if they were ten.

FGW: Even twelve or fifteen or twenty, those are your children.

FGW: Yes, even so.

FGW: Where has this family planning come from?

One elderly woman specified that if a woman was permanently 'sent home' for misbehaviour, cows would be returned to her husband by her parents in proportion to the number of children she left behind. Thus, if the husband had given sixteen cows and she had produced ten children, six cows would be given back to the husband (see also Ocholla-Ayayo 1991). Not surprisingly, separations were rarely permanent (see also Potash 1978).

In principle, the control of the husband over a wife was absolute. The strongest statement expressing this came from one of the two older men whom we interviewed; it is echoed, however, in many passages from the interviews with older women, as well as in some passages in the interviews with younger men and women. In the following interchange, we see the interaction of the elderly male respondent with the young, single, 'modern' female interviewers who came from the outside and wore trousers. Their questions reflect their intense interest in those aspects of their culture where change appeared to them to be greatest and most pertinent to their own lives. These interviewers are Luo raised in Nyanza Province who now live in Nairobi, where cultural rules are clearly in flux; on these topics they often probed more than suggested by the interview guide, and in effect add a third generation (grandchildren) to the picture presented here.

Q: Would a woman have her own money or property?

R: A woman was the property of a man, that's why he gave cows to get her. The home was the man's, so was everything in it. A woman cannot have much money; in fact it's not even worth saying it's money, the ratio is too small. Like

if a man had two thousand shillings and a woman had twenty shillings, the man would not even bother about if she wanted to use it to buy small fishes (*omena*) and paraffin if she didn't have [any].

Q: Did she have to say when she was using her own money?

R: That kind of money was too little to mention.

Q: Would the woman know how much the husband had?

R: The man would [can] have so much that it would take the whole night to count it. That's not something a woman can do.

...

Q: Supposing the woman was not feeling well that night, would she refuse [sex]?

R: Can a prisoner refuse to do what he has been told to do? Can a head of a house want to enter his home and a stranger tells him he can't enter?

Q: How about if the woman wanted, but the man did not want?

R: That's what I'm saying, the devil has penetrated your times, all you think about are such topics. Young people now mess around so much.

It is difficult to evaluate the extent to which the older generation are relating a normative picture of the past (which in any case was not so long ago, since the older women are talking about their childbearing years). What is evident is that there were disorderly women in the past. In the following segment from a focus group [UGFGOld.1] older women recalled these transgressions with enthusiasm and, on occasion, hilarity.

MODERATOR: Could you tell your husband about what you thought about something?

FGW: Yes, you could tell him if he had upset you. You can't live in a house and not tell each other when one has upset the other.

MODERATOR: If you didn't respect him, what happened then?

FGW: He would beat you up and take you back to your home and tell your parents, and when your parents heard that you hadn't respected him they would tell him to beat you.

MODERATOR: They tell him to beat you up?

FGWs [Chorus]: Yes. [laughter]

MODERATOR: What about you, mama, what happened if you didn't respect your husband?

FGW: When I was young my grandmother would tell us, if you want to be on good terms with your husband, you have to respect him because otherwise he will beat you because he took you from your home, he is now like your parent. And if you didn't respect him and he took you back home, the parents would listen to both sides of the story and if you are wrong then they would tell him to beat you.

MODERATOR: Do you people know anyone who was beaten and sent away?

FGW: Of course. There were many.

MODERATOR: Were you people sent away?

FGWs: Yes. [laughter]

MODERATOR: You were sent away?

FGW: I was only beaten but not sent away.

MODERATOR: Why were you beaten?

FGW: [laughter from the woman] I had gone to see my aunt together with my sister, and we went early in the morning at 7 o'clock and came back at 7 p.m. and I had left a small baby behind. We were living with another old man who asked my husband, 'Are these women more powerful than you? How can the women leave here early in the morning until evening and the baby is just crying?' So my husband went and got a stick and was waiting for us. He stood on the roof and my sister's husband was also annoyed so he just sat in the house also holding his son [laughter from the women]. So as we were approaching, we saw my husband with his stick and we started laughing, but we had hidden in the bushes so he couldn't see us. She said 'Today we are going to see. We will be beaten, [laughter from the women]. We were really beaten because we stayed even longer in the bushes laughing and we came back even later.

...

MODERATOR: Were women beaten for no reason at all or were they beaten only when they had made a mistake?

FGW: Only when you had made a mistake. [The rest agree in chorus]

SOCIAL CHANGE

Contemporary anthropologists have, by and large, abandoned the notion of traditional culture as fixed and immutable (S. F. Moore 1994). It does seem likely, however, that increased integration of sub-Saharan African countries into a global community attendant on colonialism has challenged accepted ways of living in the period since the establishment of imperial control in the latter part of the nineteenth century. Kenya was brought into the European sphere of influence with the arrival of the Portuguese in 1498, an influence that intensified in the imperial era of the late nineteenth century when Kenya became part of British East Africa and then a colony in 1920 (Rinehart 1984).

Caldwell and Caldwell (1988a) have pointed to the influence of white settlers; in Kenya, we suspect, the presence of substantial numbers of white settlers may have made such challenges particularly profound.

In a crucial sense, the colonial period was a six-decade long colloquy among all sorts of people about culture, markers, boundaries, core values, ethnicities. These core values resonated through the football clubs, the clan associations, and the Luo Union branches. During the 1950s and 1960s, John Cosmas Owade Bala Korguok, broadcasting on the Luo programmes of the state radio, did more than any other person to reiterate these core values. An undoubtedly important institution was the Remington Cup, an inter-district annual football competition that pitted the Luo of Central Nyanza against the Bantu Kavirondo (of North Nyanza) as no other ethnic vehicle could (Cohen and Atieno Odhiambo 1989: 35).

By 'all sorts of people', Cohen and Atieno Odhiambo are probably not referring to women: certainly, the institutions which they mention—e.g. football clubs and Luo Union branches—are male institutions.

Two particular kinds of social change have implications for the persistence of male control over women. One is economic development, the other the diffusion of new ideas about fertility control and modern contraceptives. Both the similarities between them and the differences illuminate the workings of gender in these areas.

A key characteristic of economic development is the commercialization of the economy. The older women described the time when they were children as an era in which there was either little or no money, by which they meant modern cash: people bartered, or used red stones as currency. Although some insisted that there was no money in their childhood, this is probably not the case. In 1901 the British imposed a hut tax, and Luo males were impelled out of Nyanza Province to work as migrant labourers and were thus drawn into a cash economy. Nyanza Province has been known as a labour reserve since colonial days (B. Bianco, personal communication), and by the mid-1920s more than half of male Luo were estimated to be working for Europeans (Leys 1975: 31).¹²

There is no question that the economy has become increasingly more commercialized over the older women's lifetimes: even these relatively remote areas of South Nyanza participate in a national, and to some extent an international, economy (Hyden 1986). Although the South Nyanza economy is still predominantly subsistence agriculture and there are few of the accoutrements of development (e.g. electricity, factories), money circulates, and there is a great desire for more: for school fees, which are small for primary school but large for secondary school; for transport to visit relatives or attend funerals (a social obligation); for food when crops are insufficient, as they have been during the recent years of 'too much sunshine'; and, more generally, for desirable goods such as fashionable clothing, soap, and sofa sets. Many of the goods now available were probably not available twenty years ago.¹³

In principle, the commercialization of the economy opens up opportunities for women to gain their own resources, which might permit them more autonomy. Most of the respondents in the in-depth interviews, however, rejected this notion when it was proposed, and talked in terms of a family economy, with both husband and wife responsible for the support of the children. Wives are primarily responsible for the day-to-day needs of children, and men for the larger monetary outlays, particularly the 'modern' ones of school fees and medical expenses. There is not a simple division of responsibility, or clearly separate budgets. Rather, there is a sense that both husband and wife (and to a considerable extent, we think, other members of the compound) are engaged on a joint project. Men are expected to devote any earnings to the family, and, according

to both the older and the younger women, if a wife earns a bit of money she is expected to use it on the household, particularly the children, and to give it to her husband if he needs it. All women who were asked the question said that if their husband needed money for school fees or medical expenses they would certainly give him what they had. In many couples, sharing goes beyond this. One woman [Ugfemyoung.1], when asked whether she would give money she had earned to her husband so that he could drink, said she would: 'If he drinks just enough [in moderation], and is longing for it and doesn't have money and we normally help each other, then I would just give it to him.'

None the less, the commercialization of the economy permits women to hide resources in a way that was not possible earlier. As Shipton (1989) notes, money can be transported, divided, and concealed. Older women emphasized that, if they had the opportunity to work for a neighbour and earn some chickens or a cow, this could not be hidden from the husband: 'It's his compound, how could I hide anything?', a statement that is both normative (reflecting the notion of a household economy) and practical (livestock is visible). Resources in the form of money can be hidden in a woman's 'box' or suitcase, which is considered to be private, or perhaps in the kitchen, where men are not expected to enter. A few of the older women and many of the younger took it for granted that a woman need not make full disclosure of any earnings, and can hide something for herself. The following is taken from an interview with a middle-aged woman [Ugfemyoung.1] on Mfangano Island, and is quite typical:

Q: You have never had money which is your own?

R: Yes [I have].

Q: Does your husband get to know about it?

R: Yes.

Q: Do you tell him about the whole amount, or just some?

R: Sometime I say the total amount, sometime less [than] total.

Q: Why do you sometime say the total amount, sometime less [than] total?

R: I would have something I want to do secretly which I don't want him to know about.

Although the commercialization of the economy in principle offers opportunities for women to earn—and hide—money, in practice the extent to which women in these areas have benefited from the wider commercial opportunities associated with economic development appears to be small.¹⁴ About 60 per cent of the women on the household survey earned money, but in the in-depth interviews this was almost invariably described as 'something small', not worth bothering about, as the elderly man quoted earlier said. That women say they only earn 'something small' may in part be a strategy adopted to evade the demands of a spouse, relatives,

or friends, since those with money are subject to demands for gifts or loans (Goldenberg 1982), or it may be a strategy to induce our research team to offer them gifts or loans. In addition, describing one's earnings as 'something small' maintains what may at times be a fiction, that the man provides for the financial support of the household (the men in these areas are poor as well). For example, one of the younger women said that her husband had agreed that they would use family planning after the birth of her next child. When the time came, however, her husband refused, saying 'What don't I have that we should practise family planning? What burden do you have having this baby, does he need a dress which I cannot buy him? Or is it food?' She answered him diplomatically: 'Even if you can [afford these things], it would be good to plan our family. . . .' [KhFem.3].

It may be that a few women have been able to earn and hide substantial sums of money.¹⁵ But it is probably largely correct that women earn either nothing or 'something small', since men have been able to control the opportunities for obtaining larger sums. To some extent, this works through education. Educational opportunities expanded rapidly in Kenya after Independence; although there was a vast increase in the numbers of both boys and girls attending school, the ratio of male to female growth rates in educational participation between 1950 and 1980 was 146, about average for such growth rates in sub-Saharan African countries (Robertson 1985). Currently enrolments in the first years of primary school are about equal for boys and girls (Makau 1994), but girls drop out at a more rapid rate. Although 80 per cent of the women in our household survey had attended school, only 14 per cent of those had attended secondary school, and slightly less than half of those had finished. The teachers at the village schools we visited blamed this on the parents, who, they say, do not see the point in educating girls. The most desirable form of income is a regular salary, for which education at least through secondary school is usually a prerequisite. Few men or women on our survey had a regular salary, but this was more likely for men than for women.¹⁶ In addition, money is earned by steady or casual labour, in these areas primarily from fishing, which is relatively lucrative compared with selling farm produce (except in one area, where there are significant cash crops), and from work in stone quarries in another area. Both of these jobs, however, are defined as men's jobs.

In addition to new sources of money offered by the ordinary processes of economic development, there is another source of money to which the residents of these areas look. When these residents speak of 'development', they are referring to specific projects brought to the area by the government or by foreign donors: it is outside money, capriciously dropped or withheld. Although these projects were spoken of by the officials (e.g. chiefs, the school headmaster) and others as projects 'to develop the

community', individuals expected, or at least hoped, that they would benefit personally. Both men and women assume that men, not women, are the conduits for and recipients of development money. Just as Luo men interacted with colonial officials, they are the ones to interact with their successors from the national government, NGOs, and international organizations (see also Thomas-Slayter and Rocheleau 1995). If there was to be any development money, they would be its natural recipients.¹⁷ Permitting women to hide the small sums they can earn reselling bananas is one thing, but the larger sums that residents believe may come to them through government or foreign attempts 'to develop the community' are another.

In fact, there is little evidence of development projects in these areas: a few non-functioning windmills, a sign indicating an irrigation project in one area, a UNICEF project to distribute mosquito nets in another. More relevant to gender issues in these areas, the attempts by outsiders to prod the Kenyan government to integrate women into development (e.g. the UN's Women in Development Programme: see Kardam 1991) have been far less successful than similar attempts to prod the Kenyan government to provide family planning services (a point we discuss in more detail below). In the mid-1970s the government established a Women's Bureau, which in turn supported income-generating projects for women's groups (Ahlberg 1991; Thomas-Slayter and Rocheleau 1995). These efforts may not have reached South Nyanza; in any event, few of those we asked knew about any active women's groups.¹⁸ In addition, we were told that when such groups were active, men belonged to them. We were quite surprised, and when we asked why we were told by both women and men that men had greater skills in some necessary areas. It is also likely that both women and men considered that men were more appropriate liaisons with outsiders, and, more cynically, perhaps it is the case that if there were to be donations to these income-generating groups, the men wanted to be in a position to maintain control.

Men have largely been successful in monopolizing both economic development and 'development' in these areas of Kenya, and as a result neither appears to have had much impact on the gender balance of power. This is not so much because of men's efforts as it is due to the modest amount of economic development in these areas, and the paucity of foreign-funded development projects, either in general or of those targeted specifically for women. Men are finding it more difficult to monopolize another social change—the spread of new ideas about the control of reproduction and access to modern contraception.

Kenya has been the subject of much international pressure with regard to population control. Its high growth rate in the mid-1970s alarmed the population control community, and, since Kenya was one of the first countries in sub-Saharan Africa to adopt a family planning programme

(in the late 1960s), provoked pessimism about the ability of such programmes to operate successfully in sub-Saharan African settings. It also stimulated international activity. As a result, the Kenyan government adopted a more aggressive stance in the early 1980s.

Under considerable prodding by the major donors—the World Bank, USAID and others—the government took policy control out of the Ministry of Health and created in 1982 the National Council for Population and Development (NCPD). The NCPD received very great financial assistance and also technical assistance from the donors (as, indeed, continues to be the case) (Robinson and Harbison 1995: 90).

The amounts of money contributed have been substantial.

AID support has been a major reason for the overall impact and recent success of Kenya's family planning program. AID has assisted Kenya in population and family planning since 1972. . . . Since 1983 [following President Moi's conversion to support of family planning] a large AID bilateral program, totalling more than \$53 million, has also directly supported a broad range of family planning activities. (Dumm *et al.* 1992: 4)

USAID is the largest single donor, but by no means the only one. Currently, about 90 per cent of the contraceptive supplies are contributed by foreign donors. With the exception of condoms, these are female methods. Here, as elsewhere, family planning programmes have considered women to be their natural targets, and have devoted considerable resources to providing them with cheap and accessible modern contraceptives.

From the point of view of the Kenyan government and the donors, a fall in fertility is highly desirable. The arguments have changed over time: high fertility threatens starvation, political disorder, and persistent poverty, whereas lower fertility would facilitate development and improved infant and child health. Recently, another justification has entered the repertoire: not only are more autonomous women expected to be more able to control their own reproduction (Mason 1987), but family planning programmes are expected to increase the autonomy of women (Dixon-Mueller 1993). Although population controllers and feminists disagree about the justification for family planning programmes, they agree that the ready availability of cheap (or free) and effective contraception is a necessary step in reaching the goals of both (Hodgson and Watkins 1997). At the International Conference on Population and Development in Cairo in 1994, the arguments were not whether modern contraceptives should be available—both sides agreed that they should be, and neither challenged the focus on women—but rather for what ends and how they should be delivered.

The debates in South Nyanza are rather different from those at Cairo. Some of the themes of the programme appear in the conversations of

the men and women in the area: they talk about the burdens of raising children these days, the difficulties of feeding many children or paying their school fees. But running through the conversations of both men and women is, we think, a recognition of the potential impact of these programmes on the gender balance of power.¹⁹

In the in-depth interviews, men frequently claimed that they supported family planning but that it was the older men and women who objected, and that women refused to use it because they were concerned about side effects (S. Green, personal communication); women, in turn, frequently claimed that they wished to use family planning but that men (as a social category) were opposed. When we presented this conflict to the men who came to the meeting called on Mfangano Island to disseminate the preliminary results of our research, they insisted that the men were right: one said: 'If only the women were here [at the meeting] we would beat them [prove our point].'²⁰ When we raised this conflict with the younger women with whom we talked, including the nurse at the local clinic, they laughed at the idea that the men were enthusiastic about family planning.

The following discussion from a focus group of women aged 20–29 [LGFG.2] illustrates what women believe are two of the main sources of men's unease and, at times, outright opposition to family planning: one is that it facilitates women's infidelity; the second is that the use of contraception to limit family size disrupts the equation of cows = women = children. After discussing these from the point of view of the women, we turn to men and to what we think is the third, and perhaps most important, reason for male opposition: that it threatens the control of husbands over their wives.

MODERATOR: Why don't the men like it [family planning]?

FGW: They feel that it makes the woman free; she will start moving around with other men.

FGW: Also, men want many children, and this is especially still common in Gwassi here. They want their women to have as many children as possible, without any break. If they realize that a woman is spacing, they will say that the woman has become clever, she has become a prostitute,²¹ that is why she is doing those things.

Modern contraception is widely understood by both men and women to offer women enhanced opportunity to engage in extramarital affairs. Such opportunities would appear to be plentiful in these areas. Men and women go about their daily tasks separately, coming together in the home at lunchtime and again at dinner. In addition, many husbands work outside the area, and neither men nor women assume that women are 'passionless'. Both men and women are expected to have extramarital

affairs, as indicated by this segment of a focus group with older women [UGFGOld.2]:²²

MODERATOR: What could make a man beat up his wife?

FGW: If you made a mistake then you would be beaten.

FG: Sometimes a woman would be unfaithful and move around, and the husband did not like that so he would beat her.

MODERATOR: So sometimes women were unfaithful?

FGW: Yes, being unfaithful started a long time ago.

FGW: But not as much as nowadays.

FGW: Not like today.

MODERATOR: And if a man was unfaithful, what could you do?

FGWs: [All laugh]

FGW: A woman could not teach a man. That was his own arrangement, he would just move around.

FGW: You would just feel bad.

In these communities, men have been and are expected to have extra-marital affairs. Women were and are beaten or sent home if they are caught 'red-handed', but a certain amount of 'moving around' seems to have occurred in the past and, according to both men and women, continues to occur. It is hard to know whether the extent of infidelity has increased following the introduction of modern contraceptives into these communities, but many older women, younger women, and some men believe that it has. Women's infidelity was tolerated in the past, and is tolerated still.

The use of family planning to achieve smaller families is a different matter. As noted earlier, the 'goodness or badness of many or few children' is a topic of community-wide debate, and there is considerable ambivalence among both men and women. Many women and men are unsure about whether they want to space births or stop childbearing, and, if they do, whether the health risks they perceive to be associated with modern contraceptives are tolerable. In addition, women are also concerned about the opinions of those with power in their lives, particularly their parents-in-law and their husband.

The younger women almost uniformly say that their parents-in-law are opposed to family planning because they want many children, and the interviews with older women confirm this. It is not clear, however, how much power either the young women or the older women think their parents-in-law have. Although some of the younger women say that this opposition is a factor in their decision not to use, it does not appear to be a decisive factor. One of our interviewers said quite firmly that the decision to use family planning is one that should be made by the couple, not the old folks. In addition, the older women, while railing against family planning do not appear to believe that they can do much

about it. Since the use of a method of family limitation did not appear to be a possibility in the past, we cannot compare the authority of the elders in the past and present; it may, however, be a sign of the sort of shift in generational power that the Caldwells describe as accompanying education (Caldwell 1982).

The opposition of husbands appears more serious to the women. Some women firmly believe that the decision to use family planning is one that rightly belongs to husbands. 'If he refused, you could not do anything because you are a woman who has been bought by cows' (KhFem.7). Among others, perhaps a transitional group, the cultural logic was more distanced, expressed not in terms of what they themselves said in a conversation, but rather in terms of what others believe, e.g. 'You know, men say that after marrying woman she becomes his, and he's the one who directs her in every way' (KhFem.6). Yet others were quite forthright, saying that 'these days, children are a burden', and a wife should do what she must do.

What about the men? The equation of cows, wives, and children is no longer what it was. Bridewealth is sometimes a symbolic cow, bought by the son for his father to give to the wife's father.²³ More significantly, men are evaluating with their friends an alternative route to success: fewer, better educated children versus more, less educated children (S. Green, personal communication; see also Parkin 1978, who finds such a conflict among Luo living in Nairobi in the early 1970s). In the interviews with men, some had reached the conclusion that fewer children were better; others sounded just as anguished about the decisions confronting them as did the women.

There are also other pressures on men, especially educated men. One has to do with their presentation of self, and the other with their wives. In Nyanza, and probably elsewhere in Kenya, schooling is associated with enlightenment and modernity (see e.g. Ngugi 1965; Otiende *et al.* 1992; more generally, see Caldwell 1982). Like education, family limitation and family planning have come to be considered part of the 'modern' world, and those men with the most schooling (secondary school graduates) appear to believe that it is a modern way to behave, as indicated by this comment from one of our local interviewers, a secondary-school graduate.

The majority of men feel that they are illiterate now, that if you disapprove of family planning you are illiterate. Saying he approves of family planning makes him feel he is literate, modern, he has changed, he is modern now, not back to tradition. (Tom S., Owich)

In addition, some men may come to accept family planning at their wife's urging. In some of the interviews with men, there is evidence of concern and affection for their wives, and there is no doubt that

some men, especially younger men, are sensitive to their wives' wishes; some use of family planning may be the result of the sort of 'domestic feminism' that D. S. Smith (1973) described in the USA in the latter part of the nineteenth century. None the less, a desire to have 'many children', or at least enough children to perpetuate their name, remains strong among some men, and they 'refuse' family planning. What happens then?

DISORDERLY WOMEN: THE SECRET USE OF FAMILY PLANNING

In the in-depth interviews, we asked women (and men), 'Who makes the decision about family planning?' From both men and women, the predominant response was 'the men do', with a small proportion saying it was a joint decision. After a few women startled us by adding 'but if he doesn't agree, you can use your own brain', we began asking a follow-up question: 'And what happens if he doesn't agree?' This produced substantial support for women's making the final decision. All women felt that agreement was better, and some were prepared to try to persuade their husband, 'little by little'. Others appear to find the prospect of discussing such issues with their husbands impossible: when the interviewer suggested to one respondent that 'you would tell your husband we should have this number of children', the respondent [Ugfem.3] laughed.

Just as some women are hiding a bit of money, some women are using contraception secretly. The following focus-group discussion of secret use is quite typical in several ways: the reasons for using secretly, sharing the secret with one's friends, how secret use is discovered [UGFG.2]:

MODERATOR: Are there some people who use FP [family planning] secretly without anybody knowing?

FGW: [Several] There are so many—it is because some husbands don't allow it.

FGW: There are others who just use it openly.

MODERATOR: When one is using secretly, how do you get to know that they are using it?

FGW: You can tell from the way one has spaced her children, say she used to have children too close and then you begin to see her having good spacing, so you will know that she is doing 'family' [in English].

FGW: Others tell their friends that she is using it, but she cannot tell her husband.

FGW: Some women want to tell their husbands, rather than ask first, but the husband might refuse. But you see it is the women who feel the burden, like when she is sick with the pregnancy, she is the one suffering, when the children disturb her, she is the one suffering. And when you tell the husband about 'family' he cannot agree—this forces women to go and do 'family' secretly because she's the one feeling the burden.

MODERATOR: They are not afraid that when they tell you, you will tell their husbands?

FGW: Mostly women who have talked with their husbands about it and they have refused, so they go to do it secretly without telling her husband, but she can tell one of her friends.

FGW: There are some women who when they are pregnant, they are sickly. These ones would not want more children, so they go to do 'family'.

FGW: Others are stubborn and they don't care whether the husband knows or not, they don't care [laughter]. Once it has been done, it has been done, it is done.

FGW: When I want to use it secretly, I just do it.

FGW: You can keep it, say it is pills, between clothes in a suitcase. Men don't always look into suitcases all the time. They cannot know, because men are people who have employed women, everything is done for them.

FGW: Husbands are different, some like shaking everything in the house, when you try to guard that suitcase where you have kept pills, he will say 'How come you're harsh on that suitcase like that, what is inside?' [The woman speaks harshly to the husband when he wants to look in her suitcase.] So after this, he will make sure he sees what is inside [laughter].

FGW: Men's understanding is very difficult.

Although much in the above discussion is typical of the responses of many other women, the rather light-hearted dismissal of husbands implied by 'When I want to use secretly, I just do it' is not so typical. Our impression is that the decision to use family planning is not an easy one to make (Watkins *et al.* 1995). Many women are quite ambivalent about the value of smaller numbers of children, and even more ambivalent about the use of modern family planning. Even if a woman feels she should space or stop childbearing and her husband agrees, there is a subsequent hurdle. Men and women consider modern contraception to be a foreign import, and some women questioned whether 'white man's medicine rhymes with black women's bodies'. Many women know others who have lost or gained weight, bled too much or too little, or experienced the other normal side-effects of hormonal contraception; in addition, many have heard stories—and a few claim to have witnessed—the birth of deformed babies resulting from taking tablets or injections (Rutenberg and Watkins, forthcoming).

The decision to use secretly is even more difficult. Our sense is that deceiving one's husband about family planning may be a more serious matter than hiding a bit of money, and that it may carry more risks. Some of these have to do with the violation of a shared view about what it means to be a good wife. Decisions regarding the family ought to be made by the men, and good wives respect their husband's decisions; they don't make 'noise in the house'. In addition, the women know of others who have been discovered and punished. Good wives are faithful, but there is a tradition of tolerance for deviation. There is no

such tradition of tolerance for women who go on a 'birth strike'. In addition to the usual sanctions, some women fear that if they refuse to reproduce their husband will take another wife to give them the children they want.

What, then, would justify secret use? In telling us about their conversations with women who had used secretly, women sometimes justified their friend's decision by the qualities of the husband. One woman, who used secretly, said she had to because her husband had defaulted: he does not even farm, and 'He could not buy even clothes, he loves women' [Ugfem.1]. In these poor areas, however, women understand that even good husbands may find it impossible to provide for their children as they are expected to. Ultimately, women justified their own or their friend's approval of secret use by saying that women had to make the final decision since it is they who primarily bear the responsibilities in the domestic sphere. 'A husband might see, but the woman knows where it hurts most, and the burden' [Ugfem.1]. Although women and men share responsibility for the support of the children, women see mothers as the court of last resort: if the children are crying because they are hungry, it is their mother who hears them. The arguments are not made in terms of abstract women's rights. There was no echo here of the language of the Enlightenment, or of the exquisitely gender-sensitive language of the Cairo document, or of 'our bodies, our selves'.²⁴ Rather, the women talk in terms of their day-to-day responsibilities in the domestic sphere: having enough flour for dinner with leftovers for porridge in the morning, having soap to wash the children's school uniforms.

A substantial proportion of women either are using contraception secretly, or say that they are prepared to do so should it be necessary. Men certainly know this: nearly a third of the men on the household survey reported knowing someone who uses secretly. Because the acknowledged level of use is so low (only 12 per cent of the women on the household survey say they are currently using contraception), there are many men who are vulnerable to the possibility that their wives may use family planning without their knowledge or consent. Some men appear to be unperturbed by this possibility: one said, 'About modern methods [literally, the methods of the foreigners] I can't say because I've not started—unless my wife is using them secretly. Women also may have their own movements [laughter], both of us' [Oymale.10]. Some men may tacitly approve of secret use by the wife: perhaps some feel that it is acceptable if they do not have to acknowledge it: a 'don't ask, don't tell' approach that is consistent with what appears, in any case, to be rather little communication between many husbands and wives.

None the less, our sense is that some men in these areas are quite disturbed about secret use, not only because they fear their wives may go on a 'birth strike', but more fundamentally because of the implications

of secret use for the gender balance of power. We have little direct evidence of this: we did not ask about it in the first phase of qualitative interviews, and it was rarely mentioned spontaneously by the men. Our expectations are based on the emphasis of control over women in Luo ethnographies discussed earlier, and what evidence we do have is supportive. It comes from conversations with young male secondary-school graduates, some of whom were our interviewers, from evidence of men's solidarity around this issue, and from women's comments about the difference in men's views of the use of family planning by their girlfriends and their wives.

Even the young male secondary-school graduates who describe themselves as 'enlightened' and 'modern', and who express approval of using family planning to space children, firmly drew the line when it came to secret use. In an interview with one of our local interviewers on Mfangano Island, we asked his views of family planning. This man sounded like an advertisement for the programme. He said that he had been in favour of family planning since before he was married (a position his wife confirmed), that he and his wife began to use family planning after having had three children (two boys and a girl), that he came to this position because of hearing messages on the radio, from newspapers, and from CBDs (community-based distribution volunteers), and that 'when I was in school I would go and visit people and I saw those with large families would not be having enough food, while those with smaller families had enough to eat' (a programme message). When he was asked what he thought about those women who use family planning secretly, however, he was adamant that this was wrong.

G: She is doing the right thing but at the wrong time. Why should she use family planning? Why don't you want to tell your husband? You should do something that your husband knows, and it should be the same for the husband. If I do something secretly without telling my wife I'm doing a wrong thing, so she was doing something wrong.

DW²⁵: Maybe she felt that if she told her husband he would stop her from going to the clinic?

G: Yes, she might have that opinion but she was still doing the wrong thing.

In this respondent's comments is a notion of conjugality, a notion that is violated if either the husband or wife do something secretly. But the vehemence in his voice, and the reactions of the few other men whom we directly asked about secret use, suggests that something else is going on. We think that this is not only and not primarily an issue of conjugality, or even of differing preferences regarding family size, but an issue of disorderly women. It is expressed particularly vividly in an interview with two of our local male interviewers. Women, they agreed,

are really out for it [family planning], the only barrier is their husband, that is what they are complaining about. It is very rare in African tradition for a woman

to come up with a project and a man not to complain about it. They do not approve of women coming up with new ideas. (Tom S. and Tom M., Owich)

When we asked them what men say when they oppose family planning, one replied (and the other agreed) that 'They say that "Women who are secretly using have no right to decide what to do in the house, if I discourage this she should stick to my discouragement, not take some tablets with my not knowing it, if I find this out I'll beat her"'. (Tom S. and Tom M., Owich)

That the male concern is at least in part an issue of gender rather than simply a disagreement about family-size preferences is suggested by indications that men expect their buddies to support them. Just as women tell their friends about using contraception secretly, men use their networks to uncover secret use. In a conversation with two young married men on Mfangano Island, they were both comfortable talking about family planning (one of the men wore a radio with an aerial around his neck, a display of wealth and modernity) but uncomfortable when the topic of secret use was raised. The one with the radio, however, went on to relate three cases of women he knew who were using secretly. In the first, he himself had heard about the woman's secret use from his own wife, who saw her at the clinic and told him; he in turn told the husband, a friend of his. When asked why he 'ratted' on the friend's wife, he looked bewildered, and finally said that it was something the husband ought to know. In the second case, a man who was suspicious of his wife went to various clinics to see if she was a client, and finally followed her to a nearby private clinic—where, it happened, our narrator had taken his child. The husband confronted the wife, and beat her. The male doctor then reproved the woman for not telling her husband, and the other men in the clinic chided the man for beating his wife in public: this, they said, was something private and should be done at home.²⁶

Yet another indication that the secret use of contraception threatens to disrupt the gender balance of power is the contrast between men's attitudes towards the use of family planning by their girlfriends and by their wives. Many men appear to have 'girlfriends' (often, we think, other men's wives), but they are not perceived by women as objecting to the use of family planning by the girlfriends, as in this interview [Oyfem.10]:

Q: Have you heard of men from your village who are opposed to family planning?

R: There could be, but this depends on one's income. It is not easy to know what men think.

Q: Do they only oppose their wives, or even their girlfriends?

R: How can they refuse their girlfriends? If they do that it may seem that they have already married them. The wife is his property and can't use the rubber [condoms].

Wives may not be property in the same way that they were in the past, but the notion clearly remains among some.

In the absence of family planning, it would be difficult for a woman to evade her husband's control in the reproductive realm; with family planning, it is much easier for those women who wish to do so. We do not know whether the secret use of family planning is more or less troublesome to men than other ways in which wives assert their autonomy and show a lack of respect for their husbands. We suspect, however, that the secret use of contraception is particularly sensitive, and less tolerable, because it speaks so directly to the central issue of reproduction.

CONCLUSIONS

In this paper we have considered local responses to widespread social change. Our general theme has been the interaction of global visions of economic development and fertility decline with gender as it is constructed in a particular local context. Our conclusions point to the relevance not only of the local context, but of the particular kind of social change that is at issue, and the role of actors foreign to the local setting.

In the rural areas described here, Luo males have largely been able to maintain their control of economic development. In the past, the major forms of economic resources were cattle and land, which were unambiguously considered to be owned by men. Currently, money competes with cattle and land, and ownership of money is more ambiguous. Women have opportunities to acquire money, and this money is considered theirs. Although the wife may offer the money to her husband or respond to a request from him to use the money for household expenses that are considered his responsibility, such as school fees, she is understood to hide some from him. In principle, her control over this money permits her greater autonomy. In practice, however, the amounts women can earn are typically very small, even smaller than the modest amounts earned by men, and permit little challenge to male control, were women to wish to do so. The amounts are small because Luo men have successfully been able to dominate the opportunities for acquiring money. International actors have recognized this, and have pressured the Kenyan government to integrate women into development. This pressure, however, has been fitful, and largely ineffective in these areas.

Retaining control over reproductive resources has been less easy for Luo males. Just as international agencies and the Kenyan government have attempted to bring development to Third World countries, they have also attempted to bring family planning. In Europe and the United States, where significant fertility declines occurred in the nineteenth century, using birth control probably did not challenge male control in the same way as in Nyanza Province. The primary methods used were abortion, abstinence, and withdrawal, in unknown proportions. Only the first

of these could have been done by the wife acting secretly.²⁷ It is possible that, had Kenyans been left to their own devices, the decline of fertility there would have occurred much as it did in Europe and the United States. We can speculate, as some have, that fertility control is an idea whose time had come, and where there is a will there is a way (e.g. Demeny 1994; Pritchett 1994). But of course Kenyans were not left to their own devices. It is only a slight exaggeration to say that the countryside, even in relatively remote rural areas, has been virtually flooded with modern contraceptive devices, especially those developed for women's bodies which they can use without their husband's knowledge. This is considered a success by the international agencies that have worked hard to achieve this goal, and invested much. And no doubt it is considered a success by the many Luo couples who together have decided to take advantage of these opportunities.

Neither men nor women in these areas speak the Cairo language of 'our bodies, our selves', but both would surely oppose such an idea. Both men and women consider that the decision to use family planning is one that rightly belongs to men as a social category. Some men in these areas have made the decision to use family planning to limit family size, although not without considerable ambivalence and even anguish, with respect to both the desirability of smaller families and the methods themselves, which they believe may harm a wife's health. Some perhaps came to the decision reluctantly, as the result of their wives' persuasive efforts. In any case, on the household survey, almost as many men as women say that they intend to use family planning some time in the future, and four-fifths of the women who reported using contraception say that their husbands know about their use.

Many wives believe, however, that their husbands object to programme goals in general and to modern contraception in particular. Men are believed to be concerned that modern contraception permits their wives to be unfaithful, and that they will refuse to bear more children. The first was tolerable in the past, and appears to continue to be tolerable. The second was apparently not attempted in the past, and appears as a more fundamental challenge to the fulfilment of what men traditionally considered to be one of the major elements, if not *the* major element, of the good life: children that will in turn produce cattle that can be exchanged for wives who will bear more children. The traditional elements have been eroded as money has replaced cattle, and as men consider the possibility that a few educated children may be a better route to success these days than many poorly educated children. None the less, more husbands than wives say they want more children. Lastly, and perhaps more fundamentally, the opportunity to use family planning secretly permits women to act autonomously and show disrespect. Although a relatively small proportion of women do use secretly, the men rightly understand that

the possibility of evading their control is there. Without an aggressive and well-funded family planning programme, it is possible that men would have been as successful in meeting the challenge to their control over reproductive resources as they have been in meeting the challenge to their control over money. But Kenya does have an aggressive family planning programme, one that has made modern contraception widely available even in remote rural areas of South Nyanza, and it is a powerful ally for women who have reached conclusions that differ from those of their husbands.

NOTES

1. Some sources consider the Luo to be the second largest ethnic group, perhaps because the Luhya (the second largest in the census) is an 'invented' ethnicity consisting of a variety of smaller ethnic groups.
2. Similarly, Kikuyu men in Kenya agree that women have a right to regular sex but that this right must take second place to male demands for control of women's fertility (Nelson 1987).
3. Only a few women of other ethnicities who had married Luos appeared on our survey. Most common were Basuba, a group that came from Uganda. These appear to be well assimilated in all four communities, although least so in Wakula South on Mfangano Island. There, although all those in the household survey spoke Luo, a few spoke it poorly. The elderly women we interviewed had not been to school: they understood Luo but we sometimes needed a translator from their Basuba to Luo.
4. There is a great deal of labour migration in these areas, and we were often unable to find husbands. If the husband was not available, we interviewed the next available married man whose wife was of reproductive age.
5. As a check on the translation, 6 of the first 20 interviews were translated by someone not connected with the project. The translations were extremely close.
6. Far more young males applied to be interviewers than young females; we had no applications from older males, and few from older women.
7. It is likely that at least some of those who finished secondary school had left the area for work elsewhere.
8. Comparing male reports and female reports is problematic, however, given the high level of polygyny in South Nyanza. In addition, the extent of extra-marital relationships complicates the picture, as men and women may also be reporting contraceptive use in these relationships.
9. Our analysis of the data from the 1993 KDHS shows that 15% of the users of family planning were secret users, approximately the same levels as in our household survey.
10. Because of the semi-structured nature of these interviews, it is difficult to make a firm estimate of the extent of support for secret use. The interviews

- were coded for 'supports secret use' by Watkins and Rutenberg using Ethnograph. In addition, the interviews were independently coded by Sarah Varle, a master's student in 1995 at the London School of Hygiene and Tropical Medicine, whose estimates were somewhat higher than ours. We were also able to obtain a set of interviews done in other parts of Kenya (Central, Coast, and Western Provinces) by Research International East Africa Limited (1991); these also showed similar levels of secret use and of support for secret use.
11. This compares with 26.1% of currently married women in Nyanza aged 15-49 who were living in a polygynous union in 1993 (Kenya 1994: 63, table 5.3).
 12. It is possible that this extensive male outmigration affected the gender balance of power in Luo areas. Although some wives accompanied their husbands, some remained at home, and perhaps experienced somewhat greater autonomy, as suggested by Cohen and Atieno Odhiambo (1989) for the nearby Luo area of Siaya. We do not examine this issue here.
 13. The one small store in the village where we stayed on Mfangano Island sold patent medicines, soap, toothbrushes and toothpaste, hand lotion, razor blades, combs, brilliantine, lard, oil, little lanterns, pens, pencils, watch batteries, key holders, yarn, soft drinks, and not much else. A wider array of goods is available in larger markets on the mainland. On the household survey, we asked respondents in all four sites about the frequency of visits to the nearest market: 61.5% of the men and 50% of the women go at least once a month.
 14. It is a common theme of the literature on women and development that development has not been good for women. For Kenyan examples, see Staudt (1985) and Thomas-Slayter and Rocheleau (1995).
 15. Mirka Prazak, an anthropologist working among the Kuria, another group in Nyanza Province, came to know her respondents much better than we did. She found that women sometimes had considerably more money than they would acknowledge. For example, one woman who said she only earned 'something small' had sent several children to secondary school and to university (M. Prazak, personal communication).
 16. On the household survey, 18.5% of the men claimed a regular salary. Because the pretest showed that this was very rare for women, the question was not asked of them. Note, however, that, given the relatively undeveloped state of the economy in these areas, those with enough skills to obtain a job with a regular income would be working outside the area, and thus would not have been interviewed.
 17. Our research project was apparently understood as 'bringing development to the community'. Despite the fact that the research team in the field was headed by two women (Watkins and Rutenberg), everyone negotiating with us was male, and they sought out either the male Kenyan study director or the white male American graduate students. Perhaps most startling, when the officials of the local primary school (the headmaster and the chair of the parents' committee) wanted us to make a donation for books and desks, they pursued a young male (and impecunious) graduate student rather than the senior female member of the research team: apparently they could not conceive that a woman would have sufficient resources. When the Chief Medical Officer of Homa Bay District was asked why the school officials pursued a young male rather than a senior woman for money, he at first looked

- puzzled, as if it were a foolish question, and then replied 'I suppose they thought that this was a "development" issue.'
18. On the household survey, 25% of the women said they belonged to a women's group in the past year. We think this is an overestimate, since we found so little sign of such groups.
 19. Preston (1986) notes that there can be substantial conflict between spouses over fertility, and that the outcome is likely to reflect their relative power. 'Programs that intervene in the fertility process can alter this power balance by giving one spouse, usually the woman, more direct influence in an important area of family life. So population programs can have some effect on redistributing power between the sexes, and social policy that concerns itself with this distribution should obviously take account of these effects' (Preston 1986: 94).
 20. The women were not present at this meeting because the assistant chief refused to invite them. We asked the assistant chief to arrange the meeting, and stressed that we wanted both men and women to attend. A while later, the assistant chief asked a male member of the research team whether he wanted women to attend, and was emphatically told yes. When the assistant chief left, he said 'the men will be here at 2 p.m. on Sunday', and the male member of the research team again reiterated that we expected women to come too. In the event, no women attended.
 21. 'Prostitute' appears to be a synonym for 'moving around', and need not involve a fee for service.
 22. Professor A. B. C. Ocholla-Ayayo, perhaps the foremost authority on the anthropology of the Luo, says that traditionally Luo women were known for being particularly chaste. He attributes change in this respect both to the settlement in Luo areas of Basuba (a group from Uganda who came about the time of the First World War) and to independence, which 'cut the chains' politically as well as socially (A. B. C. Ocholla-Ayayo, personal communication, 1995).
 23. A recent study of bridewealth in a nearby area of western Kenya shows that a substantial proportion of bridewealth is not in fact paid (C. Bradley, personal communication).
 24. As one woman said, women's liberation was all right in Nairobi, but 'it would not be possible here because women here don't have a way to support themselves and their children if they tell their husband off' [OYFG2].
 25. DW is David Wilkinson.
 26. In the third case, the narrator was chatting with two other friends when a fourth man came up to say he had discovered that his wife was using family planning secretly. This man then went home, there was a family discussion with the brother-in-law (and our narrator) and the husband told his wife to pack up her things and leave, which she did.
 27. Wally Seccombe (1992), using personal letters written in the first quarter of the 20th c. in Britain, Germany, and Norway, concludes that for fertility decline to take place two things were necessary: a strong desire to cease childbearing, and the capacity to take effective action to that end. Women had the former but not the latter (except abortion); men had the latter, but not the former. 'Women were strongly motivated but lacked the power to

avoid coitus and the means to avert conception, while men had it in their power to abstain, withdraw, or use condoms but were not sufficiently motivated to restrain their sexuality with any consistency' (Seccombe 1992: 77).

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Numerators and Denominators in the Study of High Fertility Populations: *Past and Potential Contributions from Cultural Anthropology*

CAROLINE BLEDSOE WITH CONTRIBUTIONS BY
FATOUMATTA BANJA

Researchers from Western societies, where fertility now hovers around replacement level, face an increasing struggle to understand the experience of high fertility, a pattern that is receding slowly into a temporal and geographical vanishing point. Nowhere is the need to understand the dynamics of high fertility more obvious now than in sub-Saharan Africa, the only major world region where fertility rates have not declined appreciably. Most African fertility regimes are considered to be governed by 'natural fertility'. The hallmark of these regimes is regular intervals between births, a pattern that suggests no deliberate efforts to control births and an ignorance of, if not an aversion to, Western birth control technologies. Indeed, our initial focus on Western contraception in rural Gambia¹ was almost a contradiction in terms. The 2,980 married women in our 1992 study sample had one of the highest total fertility rates in the world, 7.5 children, and one of the lowest rates of contraceptive use: only 9 per cent were currently using any kind of contraceptive, including traditional, and only 5 per cent were using a Western method—mostly pills and the injectable Depo Provera.

The project was an oddity on another front as well: my participation. Most card-carrying sociocultural anthropologists would consider contraception to be one of the narrowest, most myopic, of subjects. Tied to the highly applied, highly quantitative family planning establishment, it appears to rip a tiny slice of human life out of a dense social and cultural context, and cast a glaring light on an artificial, imported technology. Until I began this project, I would have rated contraceptive use as a strong candidate for the most boring of all possible subjects; a very close competitor with Omaha kinship terminology.

But wrestling with this most unlikely subject, as seen through the cultural lenses of both Western science and rural West Africans, suddenly brought to light a much broader set of findings, which seemed to breach

almost all demographic common sense for natural fertility populations, at least until the larger logic came into view. It has also unleashed streams of ideas for me about both demography and my own discipline, on reproduction, time, ageing, and morality in a way that nothing before has done.

Although many researchers associate anthropological demography with methods such as participant observation or intensive interviewing, anthropologists would like to think that they had substance to offer as well. Usually this substance consists of complicating conventional views—or perhaps ‘muddling’ them, depending on one’s opinion of the enterprise—of the most appropriate entities to count by explaining their meaning in cultural context. Only rarely does anthropology venture to simplify: to solve a welter of disparate, apparently unrelated problems. This paper will attempt some of both.

In the category of ‘solving long-standing puzzles’, I briefly summarize some remarkable recent findings from The Gambia on an explanatory framework that appears to underlie much reproductive decision-making in high fertility West Africa. That is, it is not a woman’s age or the number of children she has had that makes her fertility behaviour change. Rather, it is how she perceives the present reproductive health of her body: what I mean here by ‘reproductive health’ is the health of her physical ability to continue bearing children, particularly in the wake of previous fertility events. Because the emphasis on total fertility rate or on surviving child numbers has so dominated fertility research in the developing world, whether implicitly or explicitly, a number of anomalies have had to be pushed aside that hinted at a quite different operative principle.

In the ‘muddying-the-waters’ category, the paper will argue that these findings have caught both demography and anthropological demography flat-footed—and we may as well throw in mainstream anthropology and reproductive biology also. After identifying these shortcomings, however, I then turn around to assert that the Gambian findings suggest new ways of bringing together disciplinary strengths in social organization, demography, and biology in ways that none, individually, has yet done. Indeed, anthropology-proper has at least as much to gain at this point, if not more, from mergers with demography. Demography’s emphasis on the counting, timing, and ordering of fertility-relevant events, even if it sometimes counts the wrong things, has absolutely critical implications for social life that mainstream anthropology has hardly touched at any point in its history: issues on which I can only skim the surface here.

FROM KINSHIP TO BODIES: THE STUDY OF REPRODUCTION IN MAINSTREAM ANTHROPOLOGY

Historical demography has long drawn upon its counterpart discipline, history, for materials relevant to fertility changes in Europe. But it is only

within the last two decades, as demographic interests spread to developing countries, that demographers such as Jack and Pat Caldwell have made clear overtures for help in such matters from anthropology, the discipline that routinely sends observers to these societies.² Needless to say, these are unusual steps for a field that ranks well above anthropology in the implicit hard-to-soft pecking order of the disciplines.

If anthropology has substance to contribute to interdisciplinary ventures, one of the most important potential sources of its substance should be a continuous flow of relevant ideas to and from the core of the discipline. Yet, despite demographic calls for anthropological insights into the dynamics of high fertility, the responses from the anthropology side of the fence have been thin, relative to the size of the discipline. The lack of anthropological response to demographic calls for collaboration arguably manifests a more general abandonment in the last thirty years by the anthropological mainstream of the subject of biological reproduction, at least in the way that demographers understand it. This section reviews some of the principal ways in which the anthropological mainstream has dealt with reproduction at various points in its history, ending with the current state of the art.

Until the mid-1960s, social anthropology took on the subject of reproduction as a matter of course—as long as kinship was the scholarly idiom, with its meticulous attention to jurally framed analyses of families and households and frequent misgivings about approaches that sacrificed in-depth understandings for quantitative scope. For a long time, it was impossible to talk about reproduction without taking sides in the alliance-*v.*-descent debate. Marriage negotiations in particular attracted analytical attention because they represented the careful negotiations that created links between kin groups and set a sound basis for reproduction of the family. Related areas such as studies of symbolism and religion (e.g. Turner 1968; Douglas 1970; Richards 1982) drew attention to ritual efforts to bestow fertility at the beginning of reproductive life or to cure infertility during its course, a scholarly interest that continues to the present (e.g. Abu-Lughod 1986; Boddy 1989; Jacobson-Witting 1991; Devische 1993).³

The 1970s were marked by two major changes in the discipline. The first was growing defections from static jurial analyses of social relations to interests in 'processualism' or 'constructionism'. Rejecting the determinacy of rule-centred categories and explanations, many anthropologists embraced views that social identities such as that of 'wife' or 'mother' were fluid: they were created and maintained on an ongoing basis (e.g. Comaroff and Roberts 1981). Di Leonardo (1992), for example, shows that, rather than the family creating activity expectations such as holiday gatherings, visiting, and letter writing, such activities are more realistically understood as creating the family. French anthropologist Pierre Bourdieu (1977, 1990) was becoming a major influence in the discipline, arguing that

individuals dwell within a *'habitus'*, a taken-for-granted shroud of culture that guides their most minute behaviours, whether conscious or unconscious. Even within these unconsciously felt structures, however, there is abundant scope for manoeuvre. Every member of the culture acquires a sense of the 'field', i.e. the rules by which the game is played and competition conducted, and they strategize accordingly. And authors such as Giddens (1976) in sociology began to attune anthropology to the monitored, reflexive quality of social life: the fact that people actively observe the responses of others to their behaviour and make strategic behavioural adjustments accordingly.

The second watershed event of the 1970s was the commencement of many anthropologists' personal and professional campaigns to bring women into the forefront of social life. Combined with constructionist challenges, new interests in the interpretation of culture (Geertz 1973) fuelled growing views of gender identities as arenas of contestation. Previous treatments of women, which had emphasized childbearing and child raising—identities that implicitly conferred low status—were challenged by feminist scholars who rejected assumptions about 'natural' family structure and gender roles (e.g. Rosaldo and Lamphere 1974). Seeking to demystify motherhood, these scholars began to draw attention to aspects of women's identities that had been underplayed before—especially those surrounding work, politics, and ritual.

The role of biology in reproduction had long troubled socio-cultural anthropologists. (For a critical discussion of sociobiology, see e.g. Sahlins 1976.) But, because of strong efforts to cast out assumptions of 'naturalism' in categories that were increasingly seen as products of culture and history, attention to the role of biology in the process of reproduction began to dim (see e.g. Thorne 1992; Edwards *et al.* 1993). Childbirth is still an important object of description in many gender studies (e.g. MacCormack and Strathern 1994), yet it tends to be cast less as an event that creates a new family member than as an event that should fulfil a woman's identity experience (e.g. Martin 1987). By the 1980s, many discussions of reproduction had been drawn into wider political economy discourses, and the term was used more often in a Marxian sense of 'social' reproduction: a society's effort to perpetuate itself, often through oppression and coercion (see e.g. Robertson 1991; Moore 1994: 90). Along with modes of production and gender hierarchies, modes of motherhood and reproduction were seen as historically and socially constructed within wider systems of power.

While the reproduction of children was receding to the margins of cultural anthropology scholarship, Foucault's writings were gaining attention, especially those concerning state efforts to monitor, and thereby control, the most intimate aspects of its citizens' lives (1972, 1979, 1980). As Jean Comaroff (1985: 4–7) explains, in contrast to earlier tendencies in

anthropology to see cultural beliefs as structures that rationally mediate action, contemporary scholarship tends to treat ideas as 'distorted', if not coercive, representations of the real world. These ideas are encoded in the taken-for-granted shape of the world in symbols that people learn, through socialization, to take as 'natural'.

Building on such interests, attention to bodies as symbolic targets of surveillance and control gained momentum. While Comaroff (1985) asked how changes in the social order were inscribed in a mnemonic scheme on the bodies of colonial subjects, some feminist writings charged that hegemonic agendas more generally were being inscribed on women's bodies and consciousness. The results were (for example) enforced idealizations of thinness, genital mutilation, restrictive clothing codes, and the creation of medicalized birth practices.⁴

Yet even the lowliest members of the social pecking order are seen as capable of 'resistance' (Scott 1985) to imposed authority. Many anthropologists of the 1980s and 1990s sought to give Bakhtinian 'voice' (Bakhtin 1981) to women whom they perceive as resisting hegemonic Western medicine. Such research holds as suspect 'medicalized' descriptions of birth and the body, and approves what it sees as attempts to resist male-dominated medicines that monitor and manipulate the most intimate aspects of women's lives (e.g. Poovey 1987). Historical works such as those of Gordon (1990) document American women's struggles for reproductive rights in the face of oppressive structures of gender, race, and class. And cultural critiques accuse developers of new reproductive technologies of exploiting Western society's obsession with biological reproduction as the only acceptable form of parenting and of creating a 'male takeover of motherhood', in Rapp's (1992) deft description of this line of critique (e.g. Baruch *et al.* 1988; McNeil *et al.* 1990; Hartmann 1987; Holmes 1992).

In less than half a century, then, anthropological scholarship has undergone extraordinary changes. The field that was obsessed with kinship algebra forty years ago is almost unrecognizable as the one that now indicts symbolic state control over women's bodies. As it now stands, the overwhelming weight of anthropological interests in reproduction, if not those of the social sciences and humanities more broadly, lie in these areas, variously called the 'politics of reproduction' or the 'political economy of the body'. (For reviews, see Ginsburg and Rapp 1991; Lock 1993; see also Chapter 10 above.)

As different as they sound at first, these examples of the anthropology of reproduction, whether stemming from interests in kinship or from realizing one's identity in the childbirth experience, share one striking absence. Mainstream anthropology has lavished attention on the ideational, economic, and kinship dimensions of fertility, but it has devoted almost no concerted attention to child numbers (see, however, works in the domain of sibling sex and order by Skinner 1993), or to how births

are paced. Nor has it asked how women cope, other than in an economic sense, with the physical costs, the 'long haul', of high fertility itself. Though mentioned occasionally, birth spacing and contraception seldom take up more than a paragraph in most ethnographies, even those describing Africa. René Devische (1993) and Janice Boddy (1989), who dazzle the reader with lavish descriptions of the symbolic nuances of fertility in Zaire and Sudan, respectively, omit the subjects entirely. And whether the analytical frame has been that of descent, alliance, ritual, or identity maintenance, all births have been treated as essentially the same.⁵

KEY QUESTIONS AND VARIABLES IN THE ANALYSIS OF HIGH FERTILITY POPULATIONS

If disparate domains of anthropology scholarship have been alike in their indifference to child numbers, demography and anthropological demography are alike in taking this issue, either implicitly or explicitly, as the central analytical focus in high fertility populations. Both fields see the key question, in its barest form, as: How many children are women having—especially surviving children? When and why will these numbers fall?⁶ To answer these questions, research has concentrated on factors affecting the proximate determinates of fertility and on the economic, social, and information factors that support high fertility or bring about reductions in child numbers. Since the scope of the topic makes it impossible to do justice to the scope of these subjects here,⁷ I concentrate on domains I know best. I also concentrate on works pertaining to Africa.

In high fertility contexts, issues surrounding age at first marriage, infant mortality rates, and postpartum breastfeeding and abstinence practices may play strong determining roles in ultimate total fertility, though authors vary on how much volition they attribute to individual actors.⁸ My own work in the last decade has wrestled as well with such issues (e.g. Bledsoe 1990a; National Academy of Sciences 1993; Bledsoe and Pison 1994). Most recently, a collaborative study in The Gambia (Bledsoe *et al.* 1994; Hill 1997) challenged the natural fertility paradigm's implications for birth interval intentionalities. Because the paradigm understands people as ignorant of effective birth control measures or as avoiding them to sustain high fertility, the fact that contraceptive use in Africa often occurs in short spurts, rather than for long, sustained periods, as in the West, is often interpreted as 'discontinuation' or 'method failure': a shortcoming, perhaps, of contraceptive programmes, marketing, or availability. This study, however, showed that many of these cases are best explained as short-term 'spacing' efforts by breastfeeding women who want to avoid overlapping children, one in the womb and the other nursing, but who have resumed fecundity too soon.⁹ The paradox, of course,

is that women are *socially constructing* what look like natural fertility birth intervals. Further, they are essentially transforming high-tech Western contraceptive devices to limit births into short-term strategies to ensure the survival of many children.

As for why people might want many or few children, works drawing on anthropological findings have underscored the role of preferences and traditions. But the dominant frame for asking why certain populations maintain high fertility—and when it will begin to fall—has been that of the costs and benefits of children.¹⁰

The model has been extremely influential; yet in its most basic form, represented by the 'New Household Economics' (Becker 1976), it is also extremely confining. Considerable research has sought to extend or qualify the framework. Work on child fosterage is one example. It suggests that raising a child does not necessarily entail the costs assumed by self-contained household models. These costs operate in fluid ways. They can be spread out through time and over extended family membership (e.g. Goody 1982). They can also be shifted to different people, or they can be postponed or taken up when circumstances are right.¹¹ Leibenstein (1977: 195) goes so far as to posit that parents in such situations take a 'free-rider' attitude towards children, viewing their costs as assumable by others. John and Pat Caldwell (1987) concisely captured the fertility implications of this realization.

[Fosterage] so weakens the link between biological parentage and the number of children being raised that much of the discussion in economic demography about fertility decision-making and its concern with the value and cost of children is rendered meaningless. (Caldwell and Caldwell 1987: 419)

Even studies of child morbidity and mortality often return to questions of fertility and child costs, whether the mechanism is seen as child replacement or thinning a surplus. For example, drawing on models of households not as homogeneous, sharing units but as potential sites of inequality if not exploitation (Guyer 1981; Folbre 1986), many studies argue that in situations of demographic-economic constraint parents may invest selectively in children by sex, sibling order, temperament, or physical imperfections (e.g. Stannard 1977; Stone 1977; Scrimshaw 1978; Scheper-Hughes 1985; Bledsoe *et al.* 1988; Greenhalgh 1994).

Most anthropologically inclined works, of course, underscore such flexibilities with which children's costs can be handled. In many African countries, a very broad spectrum of strategies that spread the costs of children over time, space, and rank can be employed before invoking measures such as celibacy, infanticide, or birth control that are commonly recorded in other times and places: measures that cut off reproductive options more sharply. In Sierra Leone, for example, most families adopt a portfolio strategy of fertility, diversifying children's training and oppor-

tunities, and investing disproportionately in the most promising children (Bledsoe 1994). Thus, even in high fertility populations, the major question is not *whether* people try to control births, but *how* they may try to do so. Whether such efforts take the form of contraceptives, abortion, breastfeeding practices, schooling, or child fostering, it is quite clear that families exert prodigious efforts to control the timing and circumstances of children's births (e.g. Mussallam 1983 for the Middle East; Miller 1987 for North India; and Andes 1993 for developing countries more broadly).

The kinds of problem that such work poses for the basic cost-benefit framework, however, is mild compared with work on political economy, which questions the whole assumption that costs and benefits of children, or, indeed, child numbers themselves, can be discussed independently of regional and global inequalities. (See e.g. some of the contributions in Feierman and Janzen 1992.) Thus, Cordell and Gregory (1994) charge that Africa's current population growth crisis does not stem, as they argue many demographers hold, from a combination of the high rates of fertility that have continued unchecked from the pre-colonial past and declining death rates under the impact of colonial rule. Instead, the crisis of high fertility, a departure from pre-colonial systems of careful control of numbers, can be traced to colonial policies that stripped women of their autonomy in fertility control, built factories to produce canned milk to shorten birth intervals, conducted slave raiding, and demanded labour for cash cropping and taxes.¹²

THE QUESTION NOT ASKED

While demographic work on reproduction has covered wide ground, one important question almost never arises: if fertility is so highly desired in some societies—and if other people can help take care of one's children—why do women not produce *more* children? The assumed answer is so taken for granted that it is often not articulated: women run out of time. Most women are seen as having a fecundity span of thirty years or so, losing the ability to conceive, and thus to reproduce, either at menopause or shortly before it. (See Wood 1994 for an excellent description of the biology of fecundability.) This implies that knowing a woman's age (together with other time-based information on average birth interval length and likely age at menopause) means that we can predict, roughly, how many more children she can bear. To be sure, ample recognition is given to cultural practices such as terminal ('grandmother') abstinence and to prolonged marriage negotiations and breastfeeding norms that cut into this temporal allotment of fecundity. But for high fertility populations, time is the most common denominator. Hence, a temporal 'field' effectively pits both women and population planners against time: the former perhaps wishing

they could expand their fecund period and the latter trying to block off or 'protect' as much of it as possible through campaigns to get women to 'delay', 'space', or 'stop' childbearing.

My contention now, however, is that both demography and anthropological demography may have accepted too unreflectively both the conventional numerator—live births—and the denominator—time—used to analyse high fertility. Surveys that omit data on pregnancies that did not produce live births (abortions, miscarriages, and stillbirths) embody the conviction that numbers of children, and especially numbers of surviving children, comprise the heart of people's fertility calculations. These assumptions permeate our most important survey instruments and virtually every analysis we employ. The most important demographic survey ever constructed, the DHS (Demographic Health Survey), takes deliberate steps to screen out all pregnancies except those that produced live births. To be sure, the children-over-time equation pervades my own work as thoroughly as it does anyone else's. Though I analyse social fluidity and manoeuvring to shape fertility outcomes, the basic equation remains deeply entrenched in the analysis.

Interestingly enough, even the most strident political economy critiques take the terms of the population debate at face value: that child numbers are the critical point of discussion. The irony, of course, is that, if fertility has indeed increased under Western influence, then in some sense capitalism has helped individual African women to achieve what they have probably wanted for a very long time. (See Iliffe 1989 for a parallel observation.)

THE GAMBIAN STUDY: REPRODUCTIVE RELATIVITY AND BODY EXPENDITURE

I had no idea, at the outset, that this study of contraceptives in The Gambia would raise a question so basic as child numbers over time. But although the findings on contraception and child spacing, described above, answered many questions, some troubling anomalies began to disrupt the tidy picture. One was that women with recent stillbirths and miscarriages are common users of contraceptives. In a high fertility culture, this does not make sense. It is *precisely* those women who were trying to have a child and failed who should be most anxious to start again. Second, while men might be expected to support their wives' spacing efforts to ensure the survival of their own children, stormy arguments can arise when a husband discovers his wife's cache of pills or hears from a female relative that she was seen in the family planning clinic.

I was especially drawn, though, to the puzzles at the end of reproductive life. The behaviours and commentaries of older women comprised

by far the most troublesome stumbling blocks. Many women who were only in their late thirties reported on our survey that they were 'too old' to have another child, though several of these 'too old' women were having regular menstrual periods and a number were using long-term contraceptives. Several were even breastfeeding at the time of the survey. And while Depo Provera alarms young women because it tends to spill over for months and delay the next conception, it is the overwhelming contraceptive of choice of older women who want longer spaces—what they call 'rests'—between births.

The use of strong contraceptives towards the end of reproductive life might suggest that older women are trying to limit their child numbers, a pattern that fertility transition watchers might seize upon. But there is a critical distinction to make here. Limiting 'births' is not necessarily the same as limiting 'children'.

Closer inspection of these anomalies led to a startling realization. Although Western culture gauges the limits of fertility by the passage of time, the demise of the ability to conceive is far less important to women than their eroding bodily capacity to bear a child safely. They express this capacity metaphorically as reproductive 'muscles' (*faso*), which they 'lose' irreversibly over successive pregnancy terminations, arriving eventually at a state of total muscle depletion. Every woman has a fairly circumscribed reproductive potential whose limits she knows clearly only as she nears its end. A woman who has lost all her muscles—not one with many years behind her—is considered 'old'. Hence it is not surprising that women who said they were 'too old' to bear children, often drawing attention to their aged appearance, seemed young in years. Within the 'muscle loss' theory, a woman can be 'old' for over half of her life.

While everyone knows that a sub-fertile woman will eventually reach menopause and get old, a woman who has had multiple pregnancies will age faster. In fact, menopause itself is sometimes explained as *result* of all muscle loss. To a great extent, then, normal or even generous birth intervals make no difference in terms of total fertility. The body simply runs out of vital substance.

How is the state of the body assessed? Three things are important: (1) reproductive 'muscles', (2) 'strength' (this being used for day-to-day work as well as at delivery, to spare the 'muscles' unnecessary exertion), and (3) blood. The most obvious way to 'read' these indicators, of course, is to ask how the woman herself feels, particularly at delivery time. If, after several pregnancies, her deliveries begin to be more prolonged and painful and she takes longer each time to recover her strength and blood, she knows her muscles are reaching their end; she is a *sarifo* woman ('spent'). Other people, especially other women, can often assess her body state as well. Slack tissue all over the body but particularly in the lower abdomen indicates a loss of reproductive 'muscles'. A woman who is short on

'strength' is thin ('dry', in the local idiom) or listless; and she has drab, flaky skin and coarse hair. While strength can be recouped by rest and ample food, and blood somewhat less so, reproductive 'muscles' cannot be recovered at all.

The most extreme manifestation of muscle loss is having a 'deep womb': thinly stretched by multiple fertility events, it has lost the power to expel a baby. It is still possible to conceive with a 'deep womb', but everyone recognizes this as a dangerous state; because the body has lost its ability to expel a foetus, prolonged labour, haemorrhage, and possibly death can result. Finding their strength increasingly hard to regain after each successive birth, high-parity women may actually welcome the long-term effects of Depo Provera, something that most younger women just beginning their childbearing careers wish to avoid at all cost. Indeed, a woman who has reached the end of her 'muscle' capacity—and this often occurs by the middle thirties—should be spared from further childbearing. What is most important, then, for a woman's current child spacing behaviour is not the number of children she has had, or even the number of live births. Large numbers of living children, while highly desirable, are not necessarily what she is monitoring: instead, it is the cumulative toll that different fertility outcomes have exacted on her body over *successive* fertility events.

While a woman fully expects to spend all her reproductive capital eventually, she prefers to do so through normal childbirth events. What she most fears is outcomes that not only fail to produce living children but are far more destructive to reproductive capital: prolonged, injurious deliveries; miscarriages, which can spill alarming amounts of blood; and stillbirths, which can exact massive 'muscle' tolls during attempts to expel a large, inert mass. Similarly, a woman who has become pregnant too soon after her last birth will probably find that the next birth 'costs' her body disproportionately: because she has had no time to recoup her strength, she must use more of her capital base of muscles for this birth. Any one of these reproductive calamities may so badly deplete her body that it precipitates another the next time. A woman who has miscarried, therefore, may contracept for several months to allow her body to heal in preparation for further childbearing. Because difficult pregnancies can exact a disproportionate bodily toll, local theory posits that 'costly' reproductive events like this, as well as short birth intervals, can make a woman feel, look, and behave much 'older' than her empirically validated years would suggest.

Since any pregnancy will exact a toll on the body, the number of pregnancies a woman has had is often a better predictor of important future fertility decisions than child numbers. There are, of course, exceptions: a woman with several children who finds herself divorced must try to rebuild her child base quickly with another man, even if her strength is

ebbing and her muscles are almost gone. The same goes for a woman with a number of children dead. But on the whole, instead of trying to limit numbers of *children*, women try to use whatever means they can—long-lasting contraceptives, abstinence, extended visits to kin—to limit numbers of dangerous pregnancies and birth traumas. In this context, measuring live births per total number of fecund years would be begging the question: length of fecund time is itself a function of how well a woman takes care of her body and avoids traumatic pregnancies.

A woman's life course is locked into an ironic dilemma. She desperately wants children. But she also needs to 'spend' her body resources carefully. Should her marriage go sour, she will be at a severe disadvantage if her body is wrung out from numerous births by her husband. Her body will have been spent on a dead-end relationship and her income on its progeny. An educated woman with wide contacts in the international development world but not-quite-perfect English expressed the entire predicament as 'maternal depreciation'. Unaware that she had confused the expression 'maternal depletion', her own phrase captured far better the combined economic and medical plight of a woman who must watch each longed-for pregnancy devalue her cumulatively and make divorce increasingly infeasible.

Though the odds seem set against them, women are far from helpless in the face of forces that deplete their bodies and depreciate their value as wives. Their efforts to maximize their capacities reflect enormous scope for individual action. A woman can gain cognitive skills that enable her to mitigate body depreciation. She learns to read body signs—her own as well as those of her co-wives and daughters-in-law. And she tries to slow the pace of maternal 'depreciation' by avoiding pregnancy when her body is unprepared. Especially as she advances in parity, she tries to eat energy-rich foods that will keep some fat on her, and to ease out of heavy work to conserve her muscles. All the while, she must try to be a virtuous, obedient wife and daughter-in-law. Her hope is that her husband and in-laws, in appreciation for her devotion, will continue to provide her with nourishing food and will find household labour for her so she can regain her strength at critical points in her postpartum cycle. A woman who picks arguments with her co-wives or her mother-in-law or whose romantic interests stray temporarily runs the risk of undermining the conjugal support she enjoys for herself and her children.

As this suggests, some of the most fascinating implications of the findings lie in the juncture between health, the body, and morality. Even with her best efforts, a woman will almost inevitably suffer some body degeneration during her childbearing years: quite probably a lot. But if she has conducted her life well, has undergone a sincere 'struggle' on behalf of her husband and his family, her post-childbearing years will be a time of resuscitation. She will be surrounded by grateful people eager

to take care of her. Her husband will bless her and will readily provide bridewealth for her sons to marry and bring in young wives to 'retire' her from heavy work. The glow of health and extra weight she can now put on and the health she can maintain are moral reflections of a life well lived: of wifely devotion and of responsible, industrious motherhood. For a woman who cannot 'retire' from childbearing until menopause, who must work hard into her old age, who remains thin and drawn well after she should have been 'retired' by others, who looks far older than her age peers—for such a woman, a large moral question mark hangs over her head.

TOWARDS A NEW SYNTHESIS

In seeking new ways to examine some field material on the very unlikely subject of contraceptive use, the project has uncovered a new culturally situated theory of fertility. More work is required in order to test the body-expenditure framework against the prevailing assumption that age and the onset of menopause are the limiting factors on fertility in such populations. A major sifting, for example, is in order for a range of ethnographic and demographic literature with a new eye for evidence (whether direct or circumstantial) that the Gambian findings may apply more widely.¹³ Whatever the outcome, my prediction is that the knowledge that Gambian women have about reproduction, especially the full range of 'costs' that fertility entails, will hold important lessons for Western science, which in many ways lags far behind what these rural illiterates already know.

In any event, the findings have the potential to bring together a whole range of disciplinary strengths in social organization, demography, biology, and material culture in ways that none, individually, has yet done. Indeed, in some ways the findings from the Gambian project are not new. It is instead the sudden synthesis of a welter of previously unrelated facts that are so exciting. I now touch on some implications for work in reproductive health and reproductive biology, but then turn to the implications of the findings for further mergers between anthropology and demography.

Reproductive Health Biology

Some of the biological pieces of the Gambian theory of body expenditure initially struck me as 'wrong' from a Western scientific perspective and as something to be treated as folk belief. But subsequent conversations with two reproductive biologists (Gillian Bentley; Anna di Rienzo, personal communication) and two clinician-researchers working in The Gambia (Ben Olaleye and Elizabeth Poskitt) have provided tentative empirical

corroboration for an astonishing number of elements, at least in the domain of the costs of fertility.

The field of reproductive biology, of course, is quite sensitive to the physiological correlates of fertility at various ages and parities, especially at young ages but also at older ages. It is also interested in the somatic costs of fertility for women, given the demands of pregnancy and lactation (e.g. Friedlander 1993), although I have not yet found discussions of the somatic costs of miscarriages or stillbirths. (For recent reviews of the field in general, see Wood 1994; Ellison 1994; Leidy 1994.) Similarly, there are numerous studies of maternal *depletion*, a loss of soft tissue reserves and body fat (Jelliffe and Maddocks 1964; Tracer 1991; Gray 1994) that can occur, say, after several episodes of closely spaced births in combination with lactation, sickness, or laborious farm work. Since the syndrome tends to be seen as a consequence of bearing too many children, limiting births is usually advocated as the remedy, or sometimes spacing births.

Of course, women in natural fertility populations are seldom seen as taking active steps to control their fertility. However, in Gambian theory body fat, though essential to a woman's strength, is not the basic component of reproduction. Hence maternal depletion *per se* is not precisely what women are referring to when they describe 'muscle loss'. They seem to be referring more to muscle tension, or, specifically, the 'sinews' that give muscles their strength (Adam Thiam and Allan Hill, personal communication). Most importantly, in populations that are seen as having natural fertility, reproductive biology studies have focused on the biology of reproduction itself, and less on women's own observations of their bodily states or on their efforts to act on the basis of these states to care for their reproductive capacity. And women's active efforts in high fertility populations to monitor their birth spaces and to use contraceptives to preserve not simply their *health* but most particularly their *reproductivity* run quite far off the charted maps of most reproductive health studies.

Mainstream Anthropology

To a field such as demography, aggressive attempts by contemporary anthropology to deconstruct long-standing definitions of family, gender, and reproduction can hardly sound like promising turf on which to join forces. Indeed, most demographic discussions of high fertility populations lie in almost direct opposition from mainstream anthropology's historical lack of interest in child numbers. But although the politics of reproduction in mainstream anthropology might at first seem miles apart from demographic questions, elements of contemporary anthropology, in conjunction with the best of demography and reproductive biology, seem to be exactly what the African materials call for. A dual commitment to culture

as well as population perspectives can help forge other key domains of new theoretical ground from which both demography and mainstream anthropology should be able to benefit. One of the greatest strengths of the new genre of 'body' studies, for example, is that it draws dramatic attention to the physical side of reproduction for women—a theme that engaged almost none of the older kinship studies. Ethnographic sensitivities exemplified in the writings of Martin, Boddy, Abu-Lughod, Comaroff, Rapp, Devische, and so on can bring new light to indigenous knowledge of bodies and fertility, to time relativities, and to finely honed contingencies in time and the life course. And frameworks that examine mutually constituted life-course agendas—that take relativity, contingency, and process as the *heart* of the analysis, rather than as static background characteristics—can be applied to questions of timing, pacing, and ordering of life events in similar ways that have inspired authors such as Giddens (1976), Carter (1996), and Kertzer and Keith (1984).¹⁴

In short, the epistemologies of both cultural anthropology and demography could find culturally constituted quantifications of the sequencing and pacing of body expenditure events a mutually compelling, and a richer, explanatory base for progress in both fields. While those of us who advocate the marriage of anthropology and demography would probably argue that the results so far have been fascinating and important, the best could be yet to come.

NOTES

1. I refer here to my collaborative project in The Gambia with Allan Hill. Local terms are from the Mandinka, which has the most numerous speakers in the North Bank area.
2. In this paper the word 'anthropology' refers to socio-cultural anthropology, unless otherwise noted.
3. Another key area of reproduction-related studies has been that of children and work: for example, Douglas (1963), Oppong (1973), Schildkrout (1978), Etienne (1979), Goody (1982), McCracken (1983), Berry (1985), Brydon (1985), and Reynolds (1991), as scholars, focused on problems of household subsistence and lineage perpetuation through socialization into agricultural, domestic roles, and apprenticeship training in new kinds of economic activities.
4. See Lindenbaum and Lock (1992) for an engaging treatment of theoretically informed contemporary medical anthropology.
5. See Bledsoe (1996) for analogous patterns in American popular media.
6. Questions like this can be traced ultimately to the 200-year-old Malthusian conundrum: how can human populations strike a balance between numbers and subsistence? Though later moderated (Malthus 1989), Malthus's first edition of the famous *Essay* (1798) lays out the situation in its starkest, most

quoted, form: the 'principle of population' is an active force which, if left unchecked, will run roughshod over civilization. Fuelled by untamed 'passion between the sexes', it can lead to misery: war, famine, and pestilence. In van de Walle's (1983: 239) description, 'Malthusian theory warns of absolute limits and inevitable scarcity. It reminds us that the need for resources will continue to impose limits to growth, even though technological progress allows substitution and recycling, and may temporarily release the lid.'

7. Since several excellent reviews sum up the general area, there is no need to review it at length (see e.g. Kreager 1982; Lesthaeghe and Surkyn 1988; Greenhalgh 1990; Hammel 1990; Wood 1994; Lockwood 1995).
8. For just a few of many excellent examples, and these only edited collections, see Caldwell (1977); Ruzicka (1977); Hohn and Mackenson (1980); Page and Lesthaeghe (1981); Bulatao and Lee (1983); Handwerker (1986, 1990); Oppong (1987); Lesthaeghe (1989); Caldwell *et al.* (1988); and Locoh (1994).
9. See also e.g. Ware (1976) and Bracher and Santow (1982) for innovative analyses of the relationship between breastfeeding, pregnancy, and contraception.
10. One of the most significant theories falling under this rubric has been Caldwell's (1982) notion of wealth flows, which posits that fertility will begin to fall only when children's costs begin to exceed their benefits.
11. For examples see Davis (1955: 34–5); Caldwell (1977, 1982); Caldwell and Caldwell (1987); Fapohunda (1978); Fiawoo (1978); Cain (1981); Locoh (1982); Oppong and Bleek (1982); Oppong (1983); Isiugo-Abanihe (1985); Bledsoe (1990b); Bledsoe and Isiugo-Abanihe (1989); Page (1989); Blanc and Lloyd (1990). See, however, Castle (1995) for a different perspective.
12. Whether fertility rates have actually increased in contemporary times is unclear. In any case, the idea that Africans actually kept their numbers under control has a long history in demography. According to Carr-Saunders (1922: 214), for example, 'There is another class of factors the primary and not the incidental function of which is either to reduce fertility or cause elimination. These factors are prolonged abstention from intercourse, abortion and infanticide. The view put forward here is that normally in every primitive race one or more of these customs is in use.'
13. Extremely suggestive material can be found in McLaren (1990: 13–14), Herlihy (1985: 146), Leyser (1979: 55), and Seccombe (1992). The most important source I have found so far, an original one, is Stopes (1929).
14. For thought-provoking treatments of notions of time in anthropological scholarship, see La Fontaine (1978) and Munn (1992).

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Contraception and Religiosity in Bangladesh

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As family planning programmes play increasingly salient roles in promoting contraceptive use, religion, along with other cultural factors, deserves increased attention as a variable affecting the course of fertility decline. Bangladesh provides an interesting setting for studying the influence of religion on contraceptive use for several reasons. First, there is a strong state-supported family planning programme which has been in place for over twenty years. Second, although contraceptive use has increased dramatically in recent years, a high level of regional variation persists. While the reasons for this variation have not been explored extensively, it has been linked to variations in religious conservatism (Huq and Cleland 1990). Third, even though Bangladesh has never been a conservative Muslim society, at least by the standards of Western Asia, there is evidence of rising Islamic influence in everyday life.

There have been a number of attempts to measure the influence of an individual's religiosity on contraceptive use (Bernhardt and Mosleh Uddin 1990; Kamal and Sloggett 1993), none of which have found a strong or consistent effect. Thus, the consensus so far is that women's religiosity is not a major impediment to the use of modern methods.

This analysis is an exploration of the association between religiosity and contraceptive use in a rather different way. It is hypothesized that religion operates at the community level; i.e. it is not the religiosity of individuals that is important, but that of the community. Our hypothesis is motivated by two factors: first, Islamic doctrine lends itself to a variety of interpretations on the issue of contraception and does not forbid its use explicitly. Thus, it is likely that different religious leaders may have different views. Second, there are aspects of the way religion, and Islam in particular, works through building consensus on issues where the Koran is ambiguous, as it is on contraception, which suggests that it will operate at the level of the group, rather than the individual. Thus, it will be the opinion and behaviour of the larger group that will determine individual choice, rather than the beliefs of the individual herself.

While for the above reasons we hypothesize that religion will affect contraceptive use through its influence on the social norms and culture

of an area, we do not have *a priori* justification for choosing one level of aggregation over others. Our data allow us to test for influences at the village (over 60,000 in the country) and district (64 in total) levels of aggregation. There is some justification for considering both. Although villages are not often strongly cohesive communities (Bertocci 1976), there is shared experience among those living in the same village because of their geographic closeness. People from the same village probably go to the same marketplace, and belong to a common network in terms of exchange of ideas. In this regard, men, more than women, are the conduit of information and ideas since women do not as a general rule have a high degree of mobility. Districts, on the other hand, have a different level of homogeneity which is more cultural in nature. That there is a shared cultural identity among the people of the same district is manifest not only in behavioural patterns, as we show later, but also in what has been termed, somewhat derogatorily, 'regionalism'. An example of where district cohesion finds strong expression is in marriage markets: families prefer to find grooms within the district, presumably because of an assumption of cultural similarity.

An assessment of the impact of religiosity in determining contraception levels in Bangladesh is timely because international religious pressures may influence levels of contraceptive use by affecting the supply of contraception. Family planning programmes all over the world are influenced by flows of international funds. In Bangladesh, the family planning programme follows a strategy of co-opting religious leaders through motivation and education. This strategy appears to have been successful in defusing initial opposition to family planning. However, as religious opposition becomes increasingly vocal worldwide, influencing local religious leaders may become more difficult.¹ A recent religious interpretation by a Bangladeshi Islamic scholar, even though sponsored by the government family planning programme to enlist the support of religious leaders, stated, in no uncertain terms, the scholar's reservation about widespread availability of contraception, because of the purported implications for promiscuity (Amin and Hossain 1995). While religious leaders may in fact be amenable to family planning *per se*, their acceptance may wane when the connections between family planning and women's changing roles become more evident. Religious political groups in Bangladesh have gone on record about their opposition to the equality of the sexes, and to the increased role of women in public life.

This paper explores the nature of religious influences on contraceptive behaviour by examining the high degree of regional variability in contraceptive use and religiosity. The survey was conducted at a time of rising contraceptive use. The timing and our analytical approach make this an analysis of the influence of community cultural characteristics on the diffusion process of a new behaviour: use of modern contraception.

TABLE 12.1 Increasing Numerical Dominance of Muslims in Bangladesh, 1901–1991 (%)

	Muslim	Hindu	Other
1901	66.1	33.0	0.9
1911	67.2	31.5	1.3
1921	68.1	30.6	1.3
1931	69.5	29.4	1.1
1941	70.3	28.0	1.7
1951	76.9	22.0	1.1
1961	80.4	18.5	1.2
1971	85.4	13.5	1.1
1981	86.6	12.1	1.3
1991	88.3	10.5	1.1

Source: Bangladesh Bureau of Statistics (1993, 1994).

BACKGROUND

The population of Bangladesh is currently around 88 per cent Muslim and 10 per cent Hindu with the remainder being made up of Christians, Buddhists, and several indigenous religions (Table 12.1). The present religious composition of the population reflects changes in the past fifty years arising from the mass out-migration of Hindus and in-migration of Muslims during the partition of India in 1947. While the last wave of Muslim in-migration took place in the mid-1960s, Hindu out-migration has kept a steady pace: the proportion of the population who were Hindu was around 30 per cent before the Independence of Pakistan, and fell to 22 per cent in 1951, 18 per cent in 1961, 13 per cent in 1971, 12 per cent in 1981 and 10 per cent in 1991. This increasing percentage of Muslims is resulting in a homogenization of cultural practices and ideas. An unambiguous and distinct Bengali Muslim cultural identity has emerged to replace a Bengali cultural identity that, in the past, was not specifically tied to religion.

The emphasis on religion as a shared identity was actively promoted in Pakistan in the period 1947–71 when Bangladesh was a part of Pakistan, since Pakistan was created as a separate homeland for India's Muslims. The independence of Bangladesh was tied to the untenable economic relations between the then East and West Pakistan, but it found expression in an emphasis on non-religious and language differences between the two wings, leading also to a negation of religion as a key cultural or national identity.

The independence of Bangladesh brought about a brief period of secularism: the original constitution of Bangladesh, drafted in 1972, described secularism as one of its four basic principles. The change to military rule

in 1975 was accompanied by another wave of Islamization. The secularism of the constitution was found to be unacceptable to the military rulers of the time, and the constitution was amended to add the Arabic Koranic verse, 'In the Name of Allah, the beneficial, the merciful' to it. Subsequently, it became mandatory to begin every state occasion with this verse, along with a recitation from the Koran in Arabic. In 1988 Islam was declared the state religion. An increasing Islamic influence was also fuelled by the flow of aid from and labour migration to the Middle East.

Religion and Social Institutions

The influence of Islam in Bangladesh, and in particular the official backing of Islamization, has far-reaching effects on non-religious institutions. First, Islamic political parties have played an increasingly dominant role in state and local politics. Second, the social influence of Islam manifests itself at the local level through the reorganization of communities around mosques, which add a degree of cohesion among those who pray regularly at a particular mosque. Some of these reorganizations coincide with traditional community units, such as the *shomaj*, but as more mosques are built in communities they may also constitute another competing level of social organization. Whatever the structure of mosque societies, weekly or even daily congregations of men for prayers can be an influential forum for the dissemination of ideas and homogenization of values.

In several indirect ways, Islam has played a role in shaping education policy. Religious education is mandatory at the secondary level, but most schools have provisions only for teaching the Islamic doctrine: education in other religions is generally not available. In the mid-1980s religious schools (*madrasha*) all over the country were upgraded with funding from the government and were formally integrated into the school system. Religious education was granted equivalent status to secular education for an equivalent number of years in school.

Islam and Contraception

With regard to contraception, its ambiguous status in the Koran may mean that local attitudes may be particularly driven by community consensus. As noted by Musallam (1983), when the Koran is silent on any particular issue, Muslim scholars will usually turn to analogic reasoning (*qiya*) or consensus (*ijma*). For instance, it has been argued by some scholars that, since *coitus interruptus* ('*azl*) is allowed, the use of drugs for contraception or abortion should also be accepted.

The context of a strong programme should be emphasized. Religiosity as a behavioural measure is relevant to the use of family planning primarily because contraception is driven by a programme that relies on the

diffusion of ideas. Religiosity can be a barrier to programme effectiveness by asserting an opposing moral order. It is likely that, in an alternative setting where diffusion of ideas, and hence changes in contraceptive behaviour, are driven by development and changing economic circumstances, either because of poverty or prosperity, religiosity would play a lesser role at the community level, while remaining influential at the individual level.

A different source of rising Islamic influence is labour migration to the Middle Eastern countries following the oil boom of the 1970s. Bangladeshi men migrated to countries in the Gulf, Saudi Arabia, Iran, Iraq, and Libya, typically for fixed term tours of duty in various skilled and unskilled employment.² Return migrants may bring with them substantial savings and increased religious zeal, attributable to the exposure to Middle Eastern cultures where Islam has traditionally been a monolithic influence. Since it is common for the wealthy to endow mosques, the wealth of migrants may strengthen the force of religious institutions. Bangladeshi migrants are also said to enforce seclusion of their womenfolk with greater zeal, as Gardner (1995) describes for Sylhet.

Finally, the influence of religion may have an indirect impact by working through women's status. As with contraception, there is a debate about the Islamic position on the equality of the sexes which has arisen from varying interpretations of the Koran. Nevertheless, it is clear that more religious communities tend to reinforce the practice of female seclusion and this maintains the low status of women. There is evidence that individual women's status within the household in terms of autonomy, mobility, role in decision-making, and authority within the family are strong influences on fertility and other behaviour (Kamal and Sloggett 1993; Amin *et al.* 1993; Ali 1993; Cleland *et al.* 1994).

DATA

The data for this analysis are from the Bangladesh Fertility Survey of 1989, a nationally representative sample survey of ever-married women. Respondents were selected using a two-stage cluster sample design with approximately thirty respondents in each cluster. Clusters are primary sampling units (PSUs) defined by the National Census of 1981, and correspond approximately to villages in rural areas and *mohalla* in urban areas, selected with probability proportionate to size. Clusters were stratified by district and urban/rural area. Five out of sixty-four districts were excluded from the sampling scheme: Meherpur, Natore, Khagrachori, Rangamati, and Bandarban. Although the survey may have underestimated recent fertility in the way most fertility surveys do in Bangladesh (Huq and Cleland 1990), the data on contraceptive use have been judged to be of good quality.

The survey, in addition to the standard set of questions on fertility and related behaviour, included a question on religiosity: women were asked whether they pray every day.³ The question on religiosity has not been used extensively in the past to predict contraceptive use. Several other aspects of women's life-styles are captured in a series of questions categorized as women's independence, mobility, and role in family decision-making. The women's status variables are also known to be associated with better health indicators and higher levels of immunization uptake.

METHODOLOGY

The paper uses multi-level logistic regression to estimate the individual and areal factors that influence current contraceptive use. The model fitted takes the form

$$\ln \left(\frac{p_{ijk}}{1 - p_{ijk}} \right) = x_{ijk}\beta + w_{jk}\gamma + z_k\eta + u_{jk} + v_k$$

where p_{ijk} is the probability of woman i in PSU j in district k using a particular method of contraception, x_{ijk} , w_{jk} and z_k are vectors of individual, PSU and district-level characteristics respectively, and β , γ and η are vectors of estimated parameter coefficients; $u_{jk}(\sim N(0, \sigma_u^2))$ and $v_k(\sim N(0, \sigma_v^2))$ are error terms at the PSU and district level, respectively.⁴ This is an example of what is called a three-level model: individual women (level 1) are nested within PSUs (level 2) and PSUs are nested within districts (level 3). The purpose of this approach is to control for correlation between women in a particular PSU or district. The PSU and district level variances (u_{jk} and v_k) give an indication of the variation after controlling for the individual-level characteristics. The general framework is described by Curtis *et al.* (1993) and Goldstein (1995: chapters 5 and 7). In this paper the model is estimated using the computer package MLn (Rasbash and Woodhouse 1995).

The variable of interest in this study is the method being used, categorized as sterilization, modern method, traditional method, and no use. The reason for this categorization is that it is possible that different types of contraception will have different levels of acceptability within Islam. For example, it is likely that irreversible methods will be the least acceptable. Typically, dependent variables with more than two categories have been analysed using standard multinomial logistic regression (Retherford and Choe 1994). The extension to a multi-level framework is described by Goldstein (1995: chapters 4 and 7), and Steele *et al.* (1996) show how this can be adapted for two levels. However, for three levels with large data sets such as this there are computational problems which make, at this time, a full three-level multinomial analysis infeasible. In this paper,

therefore, the analysis is prosecuted using a series of pairwise three-level logistic regressions. Although this is a compromise, it has been shown (Begg and Gray 1984) that the coefficients estimated using pairwise logistic regressions are very similar to those obtained with a standard multinomial approach.

The estimates of the level three residuals v_k can be used to predict 'district effects', that is the contextual effect of the district in which the woman lives on her chance of using a particular method of contraception, after controlling for a range of observable demographic and socio-economic characteristics and the unobserved PSU effects. The district-level residuals can be used to obtain adjusted rankings of districts according to their average contraceptive prevalence rates (Aitkin and Longford 1986).

Confidence intervals can be constructed for each district-level residual to test for differences in contraceptive use rates between districts. Goldstein and Healy (1995) have proposed a procedure for the construction of simultaneous confidence intervals to test for differences between any pair of districts where the significance level averaged across all possible pairs is equal to the specified value. The criterion used to determine whether any two districts have significantly different average contraceptive-use rates is to examine whether their associated confidence intervals overlap. If they do not overlap, the differences are statistically significant at the chosen level.

It has been established that women's mobility and household wealth are likely to be important predictors of fertility behaviour. In this paper two scales are developed which indicate how mobile or wealthy a woman is. These scales are developed using latent class analysis (Andersen 1990: chapter 12). This technique is a special case of the more general latent structure models which have been applied predominantly in the social sciences to study the relationship between an observed set of indicators and some underlying concept which is difficult to measure directly. Examples of such unobservable concepts are intelligence, attitudes, or, in the present case, aspects of women's empowerment. It is also often difficult to obtain an accurate measure of income in societies where wages are paid both in cash and in kind. Therefore latent class analysis is employed to determine a wealth indicator from the possessions owned by the household.

To obtain a measure of a woman's overall mobility, the responses to a series of questions on whether she is able to do the following activities alone are used: walking around her neighbourhood, going to the cinema, club, or health centre, or shopping. Four latent classes, each of which represents a different degree of mobility, were identified and estimated probabilities of membership of each class were obtained for each possible combination of responses on the observed indicators. Each woman was

then allocated to the class with the highest probability for her particular response pattern.

Latent class analysis also yielded four classes of economic status from the set of questions on whether the woman possesses a chair, wardrobe, working radio, boat, cart, or bicycle, or pitcher. However, the results from a series of exploratory models showed that contraceptive use did not vary between the middle two classes and therefore these were combined in the subsequent analyses.

RESULTS

Table 12.2 summarizes the use of contraception by a number of socio-economic and demographic characteristics. These variables have been chosen to reflect the factors that are likely to influence both the decision to use contraception and the choice of method. The religiosity variable for the individual level has three categories: strict Muslim (Muslims who pray every day), non-strict Muslims (those who pray less frequently), and Hindu. The social independence and possessions variables were constructed using latent class analysis as described in the preceding section. The social independence variable has four categories in increasing order of social mobility, and the possessions variable has three categories representing increasing wealth. Family welfare centres are government facilities that provide comprehensive family planning and limited health care facilities.

There is an inverted U-shape relationship with age, in that young women and those over 45 are least likely to use any method of contraception while those in their late twenties and thirties are more likely to use a method, with sterilization being most common among those aged 35–44 and modern reversible methods most common among for those aged 25–34. This gives an indication of some use for spacing among modern-method users, an indication that is supported by the results for number of living children, which show that modern method use is reasonably high (16.5 per cent) for women with only one child.

The association between socio-economic characteristics and contraceptive use is as one would expect. Urban dwellers are more likely to use contraception than their rural counterparts, and educated women are particularly likely to use modern methods but relatively less likely to use sterilization, as are those women who score highly on the social independence and possessions scales. Finally, and importantly, there is little effect of religiosity on contraceptive use at the individual level.

Community-level factors can influence contraceptive use in a number of ways. For example, economic characteristics may play a role, as women living in relatively rich as opposed to poor areas may have an increased chance of using contraception over and above that which would be

TABLE 12.2 Contraceptive Use in Bangladesh by Method Type and Individual Characteristics, 1989^a

Variable	Method type (%)				N
	Sterilization	Modern	Traditional	None	
<i>Region of residence</i>					
Rural	11.0	12.9	8.9	67.2	6988
Urban	9.7	32.6	9.5	48.2	2789
<i>Age (years)</i>					
< 24	2.3	15.7	6.3	75.7	3553
25-34	14.3	18.4	9.9	57.4	3436
35-44	20.1	9.9	12.2	57.8	2084
45+	11.6	2.2	8.0	78.2	704
<i>No. of living children</i>					
0	1.5	6.2	4.1	88.2	1136
1	2.9	16.5	6.6	73.9	1727
2+	14.4	15.2	10.3	60.1	6914
<i>Education</i>					
None	12.7	9.5	7.7	70.0	6110
Lower primary	9.3	17.2	9.9	63.7	1303
Upper primary	6.6	22.3	13.6	57.4	868
Secondary +	4.6	37.0	11.8	46.7	1496
<i>Religion</i>					
Non-strict Muslim	11.4	14.5	7.0	67.1	4909
Strict Muslim	9.0	15.0	10.0	66.0	3531
Hindu	13.8	12.4	13.4	60.4	1337
<i>Social independence</i>					
1 (low)	7.8	10.1	8.6	73.6	5550
2	17.4	15.9	9.1	57.7	2127
3	15.7	24.5	9.0	50.8	1047
4 (high)	12.7	35.9	11.4	40.0	1053
<i>Possessions</i>					
1 (low)	13.4	9.5	7.3	69.7	5087
2	8.1	17.5	10.8	63.7	2856
3 (high)	6.1	29.5	12.2	52.3	1834
<i>Family welfare centre in locality</i>					
No /don't know	8.7	10.8	8.0	72.4	3007
Yes	12.0	16.2	9.4	62.4	6770
Total	10.9	14.4	8.9	65.8	9777

^a Using urban-rural weights.

expected from knowledge of their individual characteristics. For example, rich areas may have better health care facilities and ease of transport to them. Alternatively, the social and cultural characteristics of an area may act to influence the social norms within an area and in, say, a very conservative area may make it less culturally acceptable to use contraception

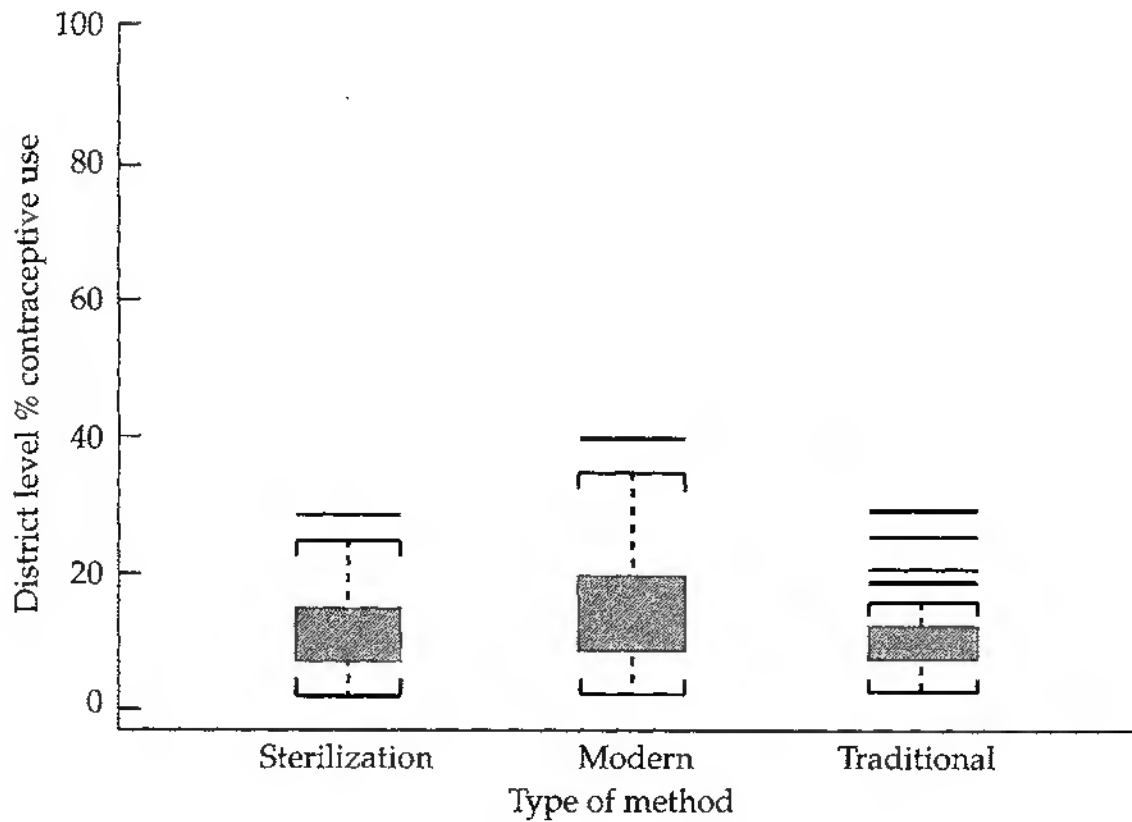


FIG. 12.1 Boxplots of district-level percentages, contraceptive use by method type

or provide barriers to the successful delivery of a family planning programme. This has been observed in Indonesia by Hatmadji (1990).

In this paper a range of social, cultural, and economic district-level characteristics were included as explanatory variables. These were population density, religiosity (as measured by the proportion of Muslims who pray every day), literacy, female autonomy (as measured by the scales developed in the previous section), toilet facilities, source of water, and household possessions. In the multivariate analysis that follows, only religion and literacy were found to be influential predictors of contraceptive use. Figs. 12.1 and 12.2 show the distribution of contraceptive use across the fifty-nine districts, and Fig. 12.3 shows the district-level variation in the percentage of Muslims who pray every day and the percentage of women who are literate. (The data for three districts, Narail, Thakurgaon, and Nowabganj, were too sparse to permit meaningful estimates and were merged with adjacent districts.) There is considerable inter-district variation both within the four regions and between them. For example, sterilization varies from 1.7 per cent in Cox's Bazar to 24.6 per cent in Chuadanga; and modern reversible use varies from 1.7 per cent in Shariatpur to 39.1 per cent in Rajshahi. Religiosity (as measured by the percentage of Muslim women who report praying every day) is lowest in Sherpur (10.8 per cent) and highest in Cox's Bazar (76.5 per cent).

In general, there is a negative relationship between religiosity in a district and contraceptive use: the higher the percentage of Muslims who pray every day, the lower the level of contraceptive use; and there is a positive relationship between literacy and contraceptive use. This relationship is the key area addressed in the multivariate analysis.

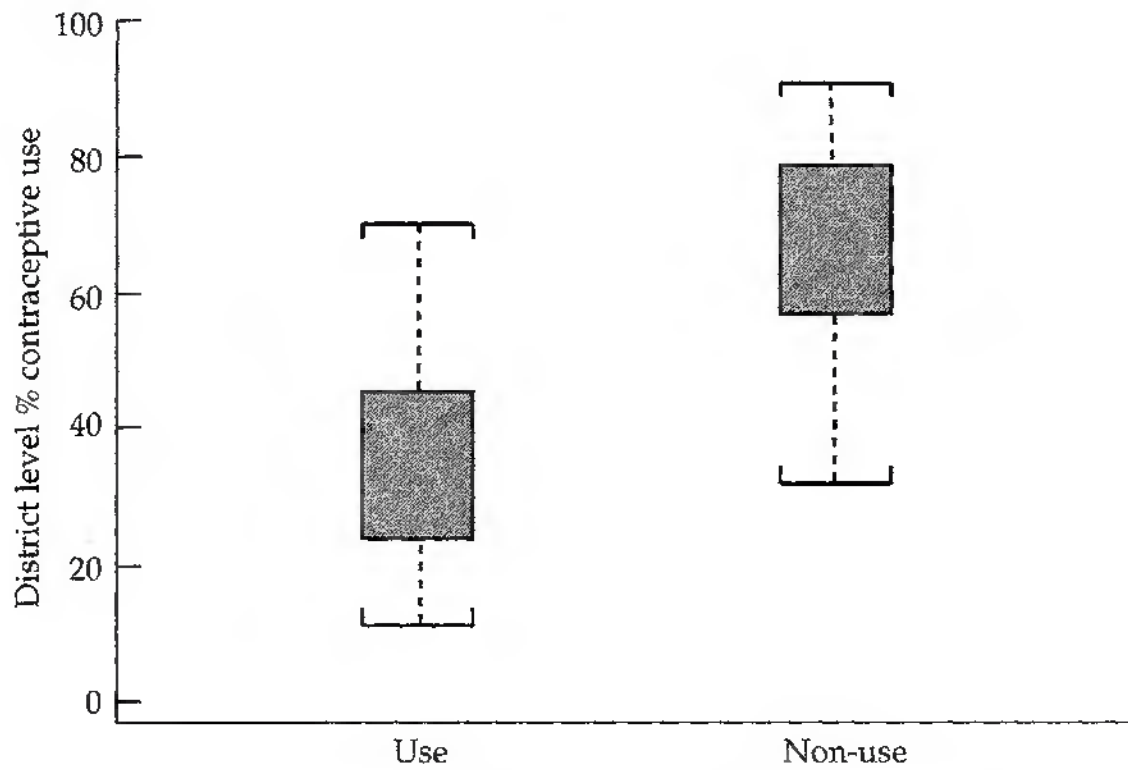


FIG. 12.2 Boxplots of district-level percentages, contraceptive use

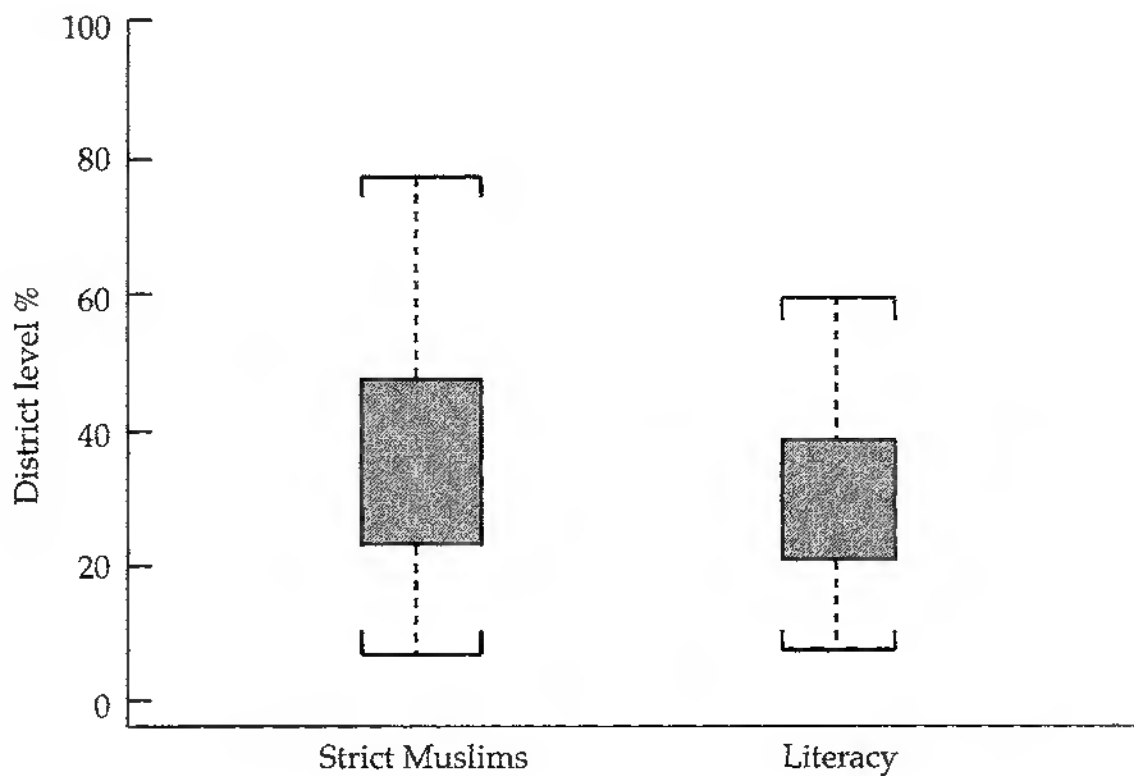


FIG. 12.3 Boxplots of district-level percentages, strict Muslims and literacy

The strategy adopted in the multivariate analysis was first to consider all the individual-level variables described in Table 12.2 as predictors of contraceptive use in a multi-level model which controlled for homogeneity between women at both the village and the district level. Then, systematically, the district-level variables described above were introduced into the model. The aim of this part of the analysis was to account for the unexplained variation at the district level.

Table 12.3 summarizes the PSU and district-level variances for the most important models. These variances can be thought of as the unexplained PSU or district-level variation after controlling both for individual and

TABLE 12.3 The Effect of District-Level Variables, Literacy, and Religiosity on the PSU-Level Variance (s_u^2) and the District-Level Variance (s_v^2), 1989^a

Characteristics included in model	Sterilization <i>v.</i> none			Modern <i>v.</i> none			Traditional <i>v.</i> none					
	PSU level	District level	σ_v^2 (s.e.)	PSU level	District level	σ_v^2 (s.e.)	PSU level	District level	σ_v^2 (s.e.)			
Individual only	0.60	(0.11)	0.37	(0.13)	0.31	(0.06)	0.29	(0.09)	0.18	(0.06)	0.16	(0.06)
Individual + literacy	0.61	(0.11)	0.37	(0.13)	0.31	(0.06)	0.28	(0.08)	0.18	(0.06)	0.16	(0.06)
Individual + religiosity	0.58	(0.11)	0.22	(0.09)	0.30	(0.06)	0.22	(0.07)	0.17	(0.06)	0.14	(0.05)
Individual + literacy + religiosity	0.60	(0.11)	0.15	(0.08)	0.30	(0.06)	0.18	(0.06)	0.18	(0.06)	0.13	(0.05)

^a Standard errors in brackets.

TABLE 12.4 Parameter Estimates and Standard Errors for Pairwise Logistic Models of Method Use *v.* None, including Proportion of Muslims who Pray Every Day and Proportion Literate in the District, 1989

Variable	Sterilization <i>v.</i> none		Modern <i>v.</i> none		Traditional <i>v.</i> none	
	Estimate	(s.e.)	Estimate	(s.e.)	Estimate	(s.e.)
<i>Constant</i>	-3.49	0.31	-2.08	0.25	-2.64	0.24
<i>Region of residence</i>						
Rural	0.00	—	0.00	—	0.00	—
Urban	0.14	0.16	0.63	0.11	-0.01	0.12
<i>Age (years)</i>						
< 24	0.00	—	0.00	—	0.00	—
25-34	1.87	0.15	-0.05	0.08	0.38	0.11
35-44	2.22	0.16	-0.66	0.11	0.61	0.12
45+	1.28	0.20	-2.44	0.24	-0.38	0.18
<i>No. of living children</i>						
0	-2.13	0.30	-1.98	0.14	-1.26	0.17
1	-1.10	0.18	-0.64	0.09	-0.57	0.13
2+	0.00	—	0.00	—	0.00	—
<i>Education</i>						
None	0.00	—	0.00	—	0.00	—
Lower primary	-0.11	0.13	0.41	0.10	0.11	0.12
Upper primary	-0.20	0.18	0.69	0.11	0.59	0.13
Secondary +	-0.35	0.18	1.05	0.10	0.62	0.14
<i>Religion</i>						
Non-strict Muslim	0.00	—	0.00	—	0.00	—
Strict Muslim	0.03	0.10	0.03	0.08	0.27	0.09
Hindu	0.45	0.14	0.04	0.12	0.69	0.13
<i>Social independence</i>						
1 (low)	0.00	—	0.00	—	0.00	—
2	0.99	0.10	0.52	0.08	0.21	0.10
3	1.06	0.14	0.75	0.10	0.32	0.14
4 (high)	1.18	0.16	0.86	0.11	0.48	0.14
<i>Possessions</i>						
1 (low)	0.00	—	0.00	—	0.00	—
2	-0.47	0.10	0.37	0.08	0.31	0.10
3 (high)	-0.63	0.15	0.65	0.10	0.47	0.12
<i>Family welfare centre in locality</i>						
No / don't know	0.00	—	0.00	—	0.00	—
Yes	0.31	0.11	0.28	0.09	0.15	0.10
<i>Proportion who pray every day in district</i>	-3.09	0.61	-2.19	0.53	-1.27	0.47
<i>Proportion of women literate in district</i>						
<i>Random effects</i>						
PSU-level variance s_u^2	2.20	0.81	2.08	0.72	0.80	0.64
District-level variance s_v^2	0.60	0.11	0.30	0.06	0.18	0.06
	0.15	0.08	0.18	0.06	0.13	0.05

district-level characteristics. This variation may be due to variables that have not been observed or that, in some cases, cannot be observed. The first row of the table gives the unexplained variation after controlling for the individual-level characteristics alone. Subsequent rows give the unexplained variation after controlling for religiosity and literacy. The important point to note from Table 12.3 is that as the district-level variables are introduced there is a marked decline in the unexplained variation, particularly when religiosity is introduced into the equation. Indeed, for the contrast between sterilization and no use, the district-level variance becomes non-significant after controlling for both religiosity and literacy.

The importance of these results can be seen in Tables 12.4 and 12.5, which display the parameter estimates and standard errors of the best model (Table 12.4) and the estimated probabilities of use for each method (Table 12.5). The estimated probabilities for a particular variable are calculated by holding all other variables at their mean and are presented because they tend to be more easily interpretable than the parameter estimates in Table 12.4.

We first consider the individual-level effects. It is immediately clear that most of the relationships described in Table 12.2 remain when all the other variables are controlled in the multivariate model. For example, urban dwellers are more likely to use modern methods, as are women with one or more children and those who are highly educated, have possessions, or have a degree of social independence. Sterilized women are most likely to be aged 35–44 and tend to be poorer. They are likely to have a high degree of social independence. Importantly, there were no significant differences between strict and non-strict Muslims for users of sterilization or modern reversible methods at the individual level.

To turn to the district-level variables, the results in Table 12.4 show that a district's religiosity is strongly negatively correlated with both sterilization and modern reversible method use, whereas a district's literacy is strongly positively related with both sterilization and modern reversible method use. This is illustrated in Table 12.6, which shows the expected probabilities of contraceptive use for a series of districts chosen to represent a range of religiosity and literacy. It should be noted that, while one might expect a district with high literacy and low religiosity to have the highest contraceptive use, this does not occur because there are no districts with such characteristics.

The importance of religiosity can clearly be seen. For use of both modern methods and sterilization, the expected probabilities are around three times higher in Nilphamari than in Moulvibazar, two districts that have similar levels of literacy. The highest rates of contraceptive use are found in predominantly urban areas such as Dhaka, where the individual-level characteristics play an important role in addition to religiosity and high literacy. This joint effect of religiosity and contraceptive use is further

TABLE 12.5 Estimated Probabilities of Contraceptive Use by Method Type and Individual Characteristics, 1989

Variable	Method type			
	Sterilization	Modern	Traditional	None
<i>Region of residence</i>				
Rural	0.053	0.120	0.094	0.733
Urban	0.053	0.200	0.082	0.665
<i>Age (years)</i>				
< 24	0.016	0.193	0.072	0.719
25-34	0.092	0.166	0.095	0.647
35-44	0.132	0.091	0.121	0.656
45+	0.068	0.020	0.059	0.853
<i>No. of living children</i>				
0	0.013	0.035	0.042	0.910
1	0.030	0.114	0.072	0.784
2+	0.075	0.178	0.105	0.642
<i>Education</i>				
None	0.060	0.111	0.081	0.748
Lower primary	0.050	0.157	0.085	0.708
Upper primary	0.042	0.189	0.125	0.644
Secondary +	0.033	0.252	0.119	0.596
<i>Religion</i>				
Non-strict Muslim	0.050	0.140	0.076	0.734
Strict Muslim	0.051	0.141	0.098	0.710
Hindu	0.070	0.131	0.138	0.661
<i>Social independence</i>				
1 (low)	0.036	0.111	0.085	0.768
2	0.082	0.162	0.091	0.665
3	0.083	0.193	0.096	0.628
4 (high)	0.090	0.205	0.107	0.598
<i>Possessions</i>				
1 (low)	0.070	0.114	0.078	0.738
2	0.042	0.156	0.101	0.701
3 (high)	0.033	0.195	0.110	0.662
<i>Family welfare centre in locality</i>				
No /don't know	0.045	0.120	0.086	0.749
Yes	0.057	0.148	0.093	0.702
Average	0.053	0.139	0.091	0.717
Favourable	0.011	0.693	0.116	0.180
Unfavourable	0.009	0.001	0.011	0.979

illustrated in Figs. 12.4-12.7. These figures use an approach developed by Goldstein and Healy (1995) to show simultaneous 95 per cent confidence intervals for the district-level variation in sterilization (Figs. 12.4 and 12.5) and modern methods (Figs. 12.6 and 12.7). The use of these figures

TABLE 12.6 Estimated Probabilities of Contraceptive Use by Method Type for Selected Districts with Different Levels of Literacy and Religiosity, 1989

District	Sterilization	Modern method	Traditional method	No method
Moulvibazar (low literacy, high religiosity)	0.020	0.056	0.061	0.863
Chandpur (high literacy, high religiosity)	0.029	0.080	0.091	0.800
Nilphumari (low literacy, low religiosity)	0.064	0.159	0.112	0.665
Dhaka (high literacy, medium religiosity)	0.100	0.240	0.134	0.526

Notes: Individual characteristics are fixed at average values and PSU effects u_k are fixed at 0. No district has a high level of literacy and a low level of religiosity.

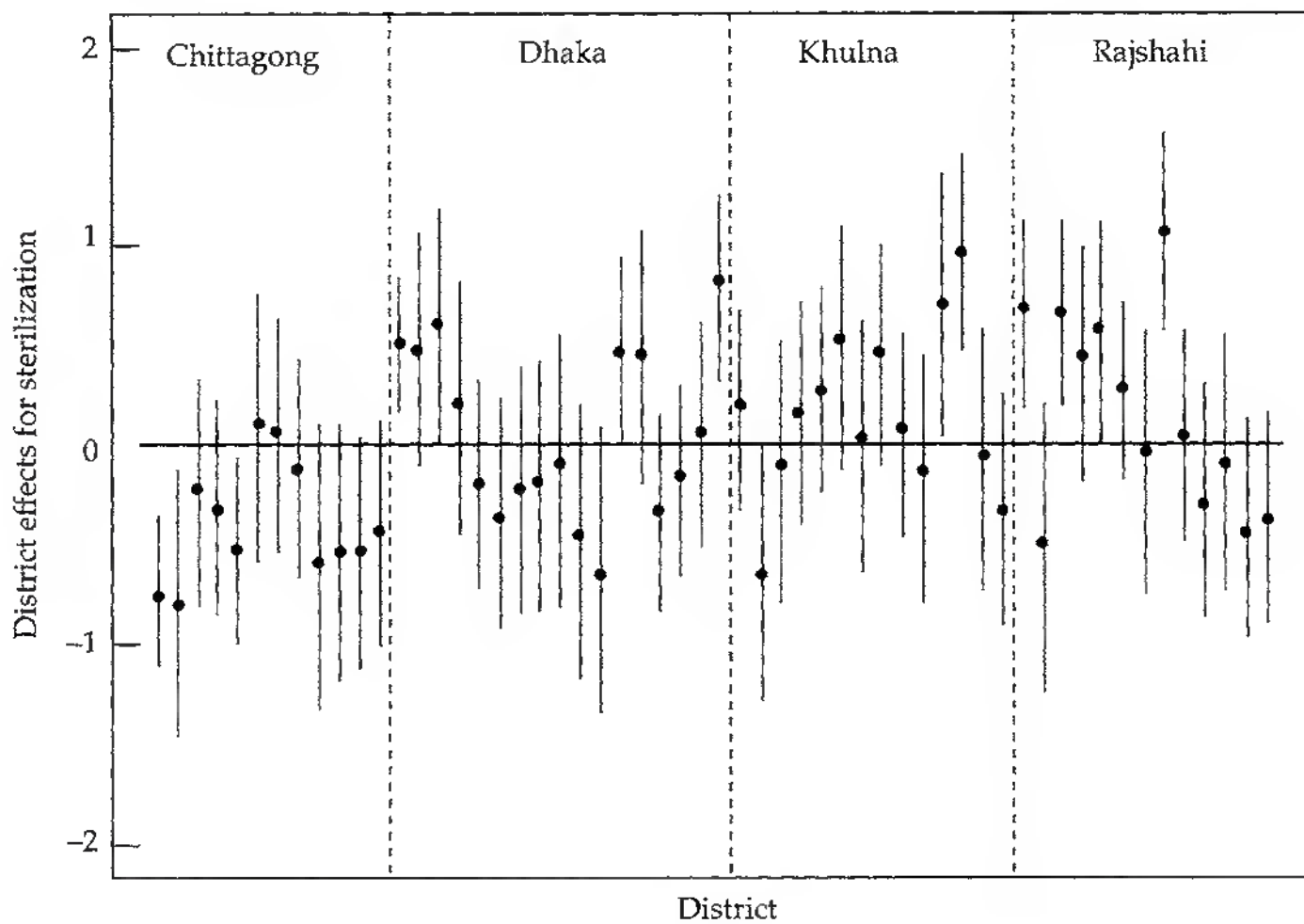


FIG. 12.4 District effects v_k for sterilization (individual characteristics only) with simultaneous 95% confidence intervals

is based on the premiss that, if all the pathways through which socio-economic and demographic factors influence contraceptive use at the district level are controlled, then there would be no inter-district variation. To illustrate this, Fig. 12.4 gives the confidence intervals controlling for

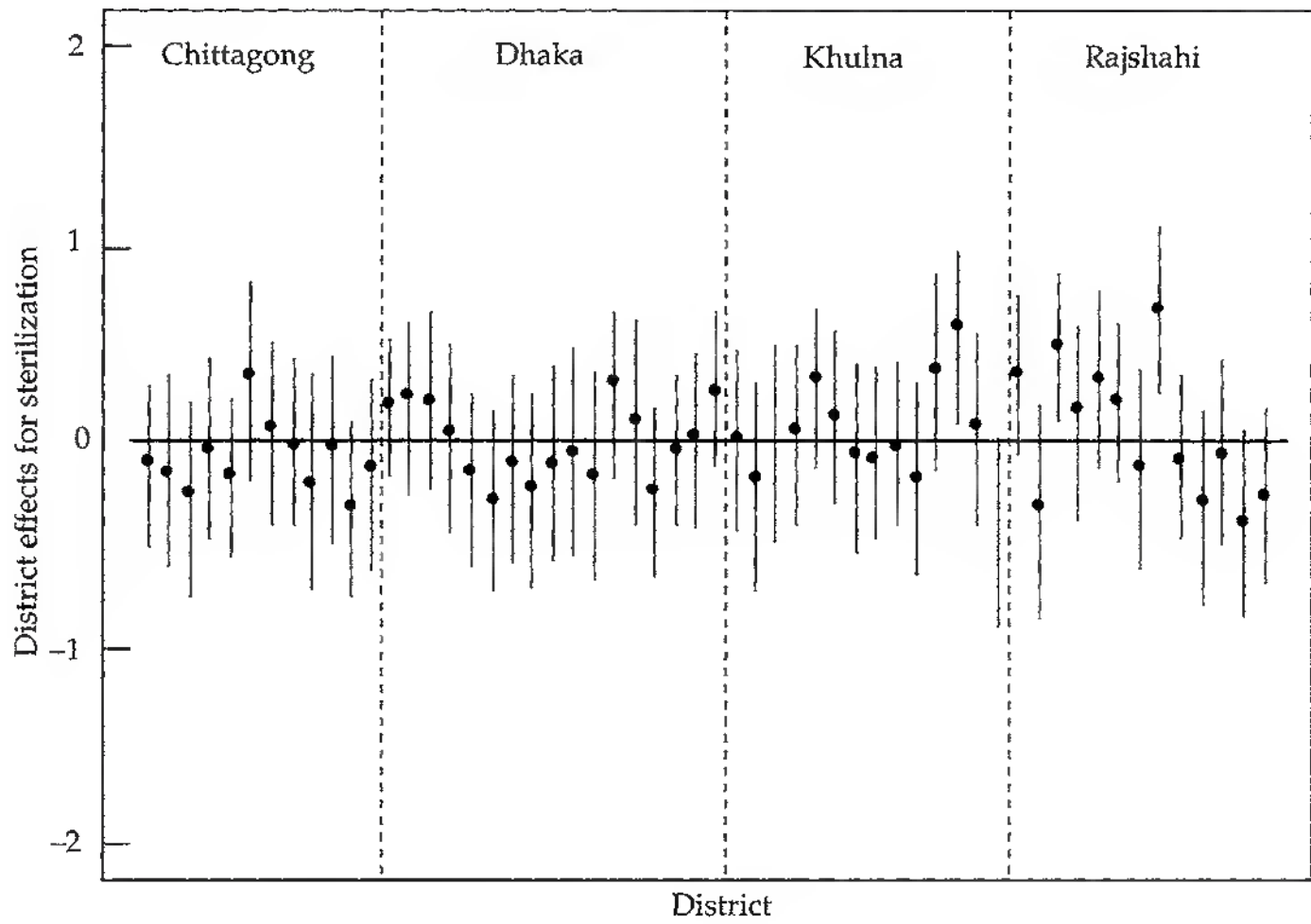


FIG. 12.5 District effects v_k for sterilization (individual characteristics and district-level variables) with simultaneous 95% confidence intervals

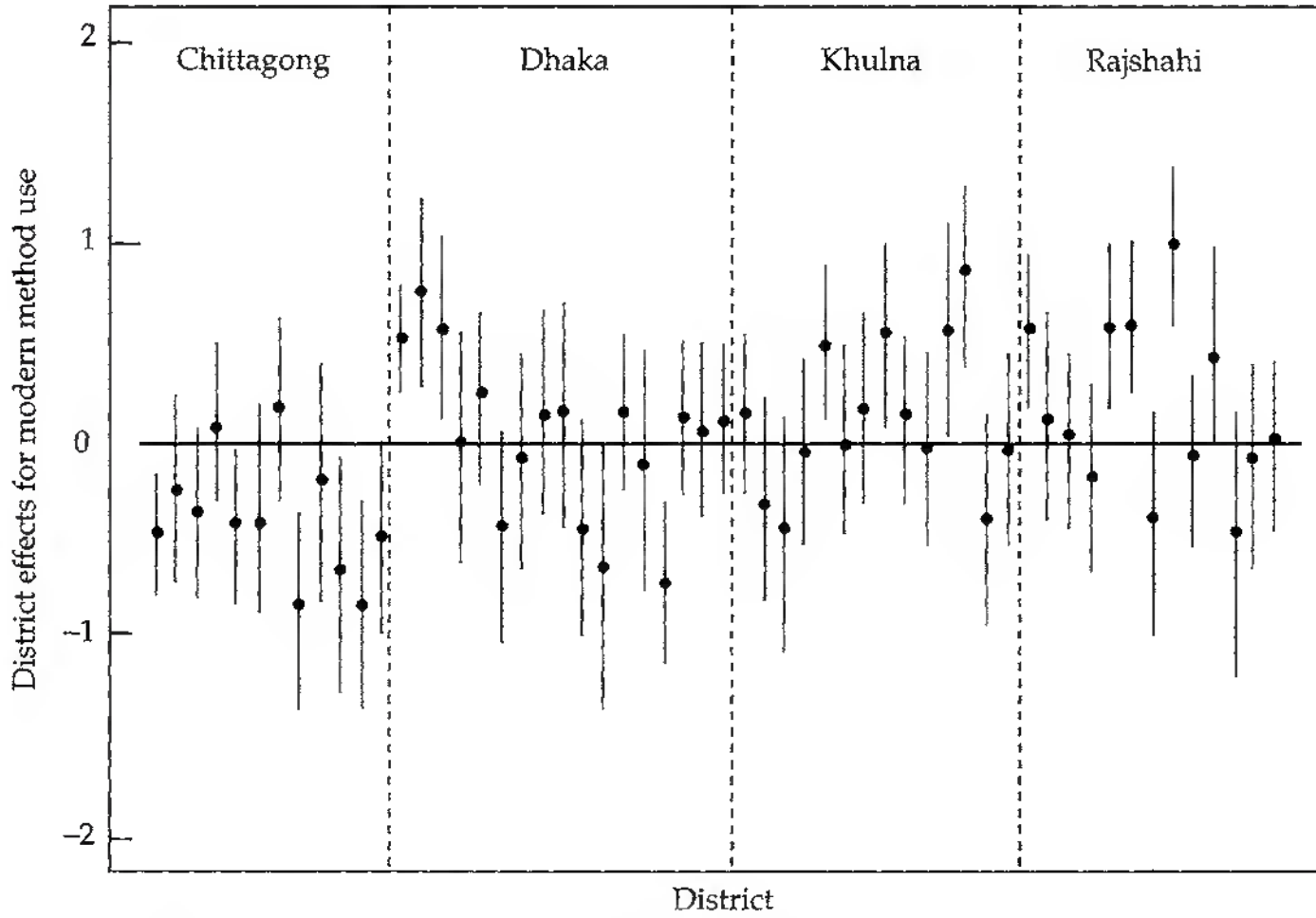


FIG. 12.6 District effects v_k for modern methods (individual characteristics only) with simultaneous 95% confidence intervals

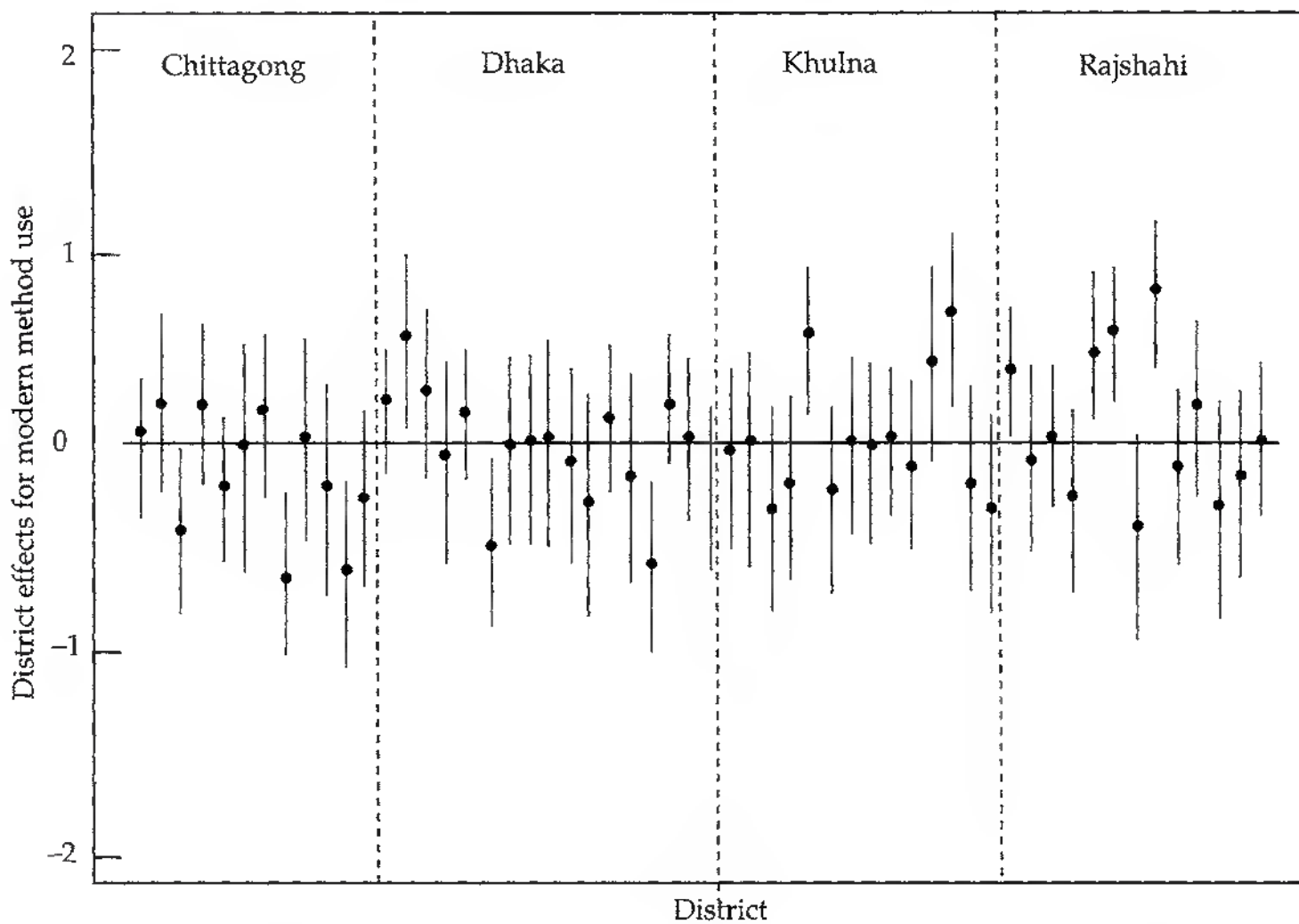


FIG. 12.7 District effects v_k for modern methods (individual characteristics and district-level variables) with simultaneous 95% confidence intervals

the individual-level variables but not for district-level religiosity and literacy. It is clear that in this figure there is still a substantial amount of unexplained inter-district variation. This variation largely disappears in Fig. 12.5, which displays the confidence intervals after controlling for district religiosity and literacy. Indeed, this figure shows that there is now almost no statistically significant inter-district variation. Figs. 12.6 and 12.7 give similar graphs for modern reversible method use and show an effect that is less marked but still notable.

In summary, while a number of important individual-level influences on contraceptive use remain, much of the unexplained variation at the district level can be accounted for by the combined effect of religiosity and literacy. The strong positive effect of literacy is a confirmation of what Caldwell (1980) has termed the influence of mass education on the outset of fertility decline—even at the low levels of education that prevail in Bangladesh, the district's educational profile has an impact on individual contraceptive practice. The impact of community religiosity on contraception has not been previously shown for Bangladesh, although a recent analysis of fertility suggests that such an effect may exist (Balk 1994).

The combined impact of religion and education attests to the role of social structure on conditioning the impact of family planning interventions. These analyses cannot identify fully the pathways by which

these social norms influence contraceptive use. For example, the family planning programmes may not be targeted so strongly in areas with high religiosity because of the antipathy of religious and local leaders, or it could be that there is simply an aversion among the population to change. However, it does suggest that the speed at which contraceptive use is accepted and fertility declines depends on the current levels of willingness to accept and institute change in a community, which may be affected by religiosity and literacy.

CONCLUSION

Our results confirm previous findings from Bangladesh, that the use of modern contraception is affected by a host of individual and community characteristics. We have attempted to explain further the considerable variation between districts that exists in the country and find that variations in women's literacy and religiosity account for a large proportion of the unexplained district-level variation. Our approach to modelling the effect of religion is particularly suited to understanding the process of contraceptive adoption.

Our central finding is that religiosity at the individual level is not as strong a predictor of contraceptive use as religiosity at the district level. We have discussed several reasons why this may be so; we can rule out, as others have done, that individual religiosity acts as a significant barrier to the adoption of contraception, or its continued use, except in the case of adoption of a permanent method, probably because the Koran is silent on the issue of contraception, and Koranic interpretations have been enlisted on both sides of the debate to support their opposing viewpoints (Amin and Hossain 1995). The impact of religiosity is strongest for sterilization, suggesting the differential legitimacy of different methods. Indeed, evidence of stronger Islamic reservations against sterilization have been found in other countries.

To turn to the pathways by which community religiosity may influence contraceptive use, a high level of community religiosity may represent a collective resistance to new ideas and innovation. The process by which opinions are formed among practising Muslims is through analogy and consensus when the Koran does not have specific prohibitions on particular issues, as is the case with contraception. A consensus is likely to be more easily reached and more emphatically diffused in areas where the practice of religion is stronger, because prayer congregations provide the space to discuss and deliberate upon such issues. The fact that the religiosity of the surrounding community is a stronger influence on contraception than the individual's own religiosity suggests that such a barrier to the diffusion of contraceptive use is indeed at work.

Religious conservatism when measured by reported frequency of praying is a measure of women's conformity to a certain ideal of good behaviour, that of being practising Muslims. It may also be interpreted as a proxy for male religiosity. It may well be that the real religious barriers operate in male spheres: men congregate for prayers every day, and thus diffusion may operate through male networks. Although one can identify the male pathways that operate to influence contraceptive use, the answer to the question of the pathways leading to the religious conservatism of a community is much more complex and beyond the scope of this paper. One mechanism may be the influence of labour migration to the Middle Eastern countries by Bangladeshi men. Migrants tend to return with considerable wealth and increased religious fervour. The accumulated wealth is often spent on community religious events or used to endow mosques. It is possible, as Gardner (1995) notes for Sylhet, that in the late 1980s the influence of returning labourers from the Middle East was substantial in changing religious practices within communities.

Religion may also work at various other levels of aggregation: Balk (1994) suggests that it works through affecting freedom of movement within the community and the leniency of households towards their women;⁵ the family planning programme experienced the impact of religious conservatism mainly in terms of greater difficulty in recruiting and posting female family planning workers in more conservative rural areas. To address this, we have controlled for women's mobility in our analysis.

Finally, the effect of community religiosity reported here highlights the importance of cultural factors in shaping the process of fertility decline triggered by family planning programmes. It also supports the view that programme influence has indeed been responsible for triggering fertility decline in Bangladesh. One would not expect a strong impact of religiosity of the community when fertility change is demand-led—either in terms of poverty-driven fertility change, or in terms of prosperity-led fertility change.

NOTES

1. A recent worldwide upsurge in religious opposition to specific forms of contraception and birth control was made evident in the Cairo Conference on Population and Development in 1994. The Vatican was joined by several conservative Islamic countries such as Saudi Arabia, Iran, and Sudan to register opposition to increasing access to contraception for women (Amin and Hossain 1995).

2. The visa tenure of migrant workers is strictly enforced by the governments of the receiving countries. The Bangladesh government encourages migration since remittances account for a major portion of foreign-currency earnings for the country.
3. Muslim prescriptions are to pray five times a day, and Hindus worship once or twice daily, usually in their own homes. Each act of prayer is no longer than 10–15 minutes, but it requires a prior ritual ablution to ensure purity. Muslims respond to calls to prayer from a mosque but, while men go to a congregation at the mosque, women pray in the privacy of their own homes. It is possible that women's religiosity in Bangladesh is highly influenced by that of their husbands. This is because, unlike in parts of Indonesia, there are no women's prayer groups and so the pathway through which community religiosity influences behaviour is through husbands to their wives.
4. In this paper PSU-level characteristics are not considered because the sample sizes within each PSU were too small to permit meaningful estimates. However, it is sensible to estimate error terms.
5. The influence of a woman's own mobility on her contraceptive use has long been recognized as a factor. The programming strategy of doorstep delivery of contraception, and the recruitment of 24,000 family planning workers for this purpose, was devised particularly to address this issue.

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The Rise of Dowry in Bangladesh

SAJEDA AMIN AND MEAD CAIN

This paper explores the origins and timing of the reported emergence of dowry payment and the extent of its practice in rural Bangladesh. The increasing incidence of dowry, and a shift from a norm of brideprice to dowry over a time span of less than one generation, represents a dramatic change which invites interpretation.

The practice of dowry among Muslims of Bangladesh has been variously ascribed to Hindu influences, male greed, and rising consumerism. Whatever the cause, the practice is widely condemned. The government has tried to eliminate it by fiat with the Dowry Prohibition Act of 1980. Important organizations such as the Grameen Bank and BRAC have also tried to discourage the practice. For example, of the 'sixteen chants' that Grameen Bank members recite at their weekly meetings, one is 'We shall neither take nor give dowry for our sons and daughters'.

Figure 13.1 shows the rise of dowry and decline of brideprice practice in two villages in Rajshahi District of northern Bangladesh. The graph plots the net value of marriage transfers among all ever-married women living in a sample of 240 households, by year of marriage. (Net value is expressed in rice equivalents.¹) Marriage histories taken from our respondents revealed that transactions were in the form of either brideprice (*paon*—groom's family paying the bride's), or dowry (*joutuk*—bride's family paying the groom's), but never both. The figure shows that brideprice prevailed until 1964, after which dowry became the norm. One can see that the transition was abrupt and complete: 1964 is the last year that a brideprice transaction was recorded and the first time a significant and unambiguous dowry payment was made. The value of brideprice was relatively invariant and typically consisted of several pieces of jewellery for the bride and some cash. The cash component of brideprice was intended to defray some of the costs of entertainment related to the marriage ceremony, which are typically incurred by the bride's father. When dowry first appeared, the most common form of payment was jewellery for the bride. In recent years cash dowries have become more

Data presented here were collected for a study on Family Structure and Change in Rural Bangladesh. Funding for the study was provided to the Bangladesh Institute of Development Studies from the Ford Foundation, Dhaka, and the Rockefeller Foundation, New York.

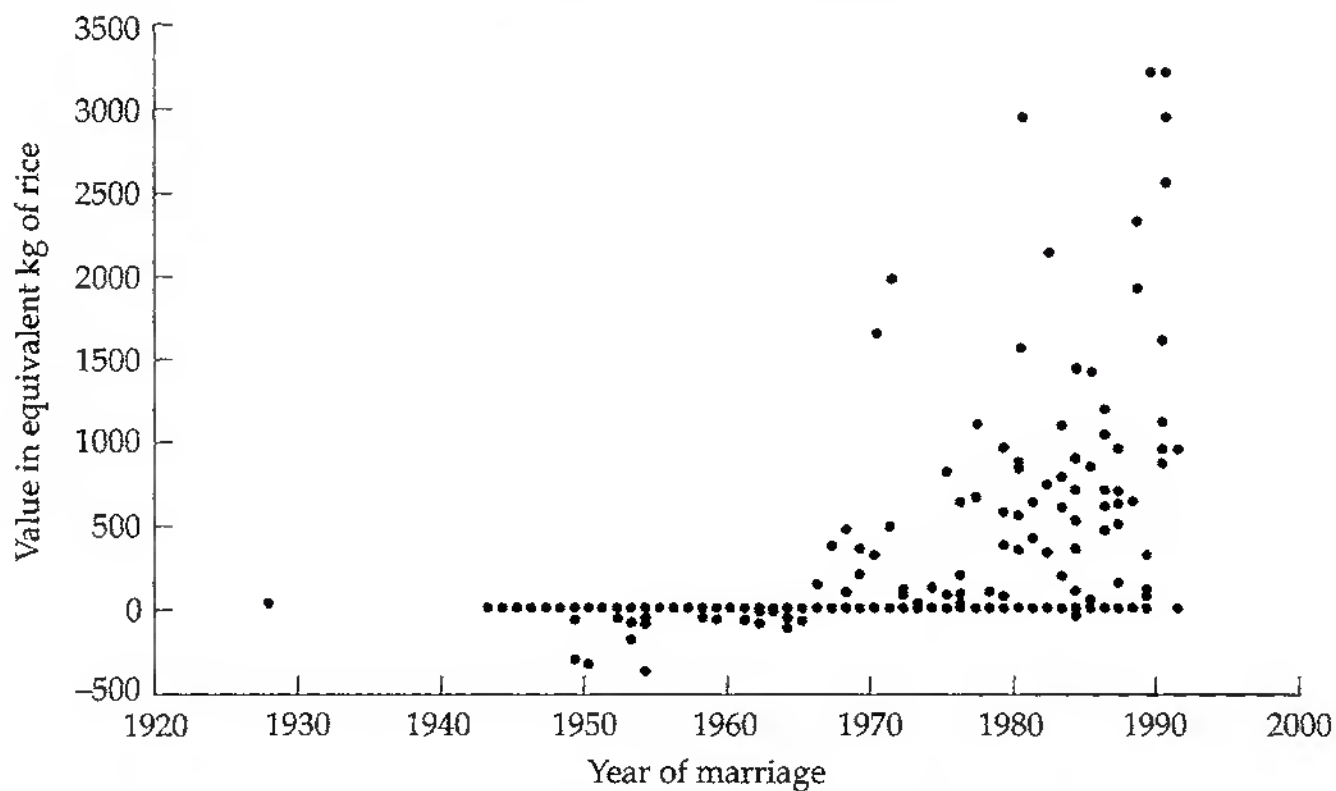


FIG. 13.1 Marriage transactions, Mohanpur, Rajshahi, Bangladesh, 1991

Value of gift converted to equivalent in kilograms of rice in year of marriage.

Three extreme values (above 4,000 kg) excluded.

Dowry: > 0 ; brideprice: < 0 .

common, and grooms will occasionally ask for radios, watches, gold rings, and items of clothing. Table 13.1 lists the different items that have comprised dowry or brideprice payments in our sample.

Figure 13.1 shows that the mean value of dowry exchanges has increased in recent years. However, while both the incidence and the value of dowry have increased, a large number of marriages, now and in the past, take place with no transaction at all.

We examine the emergence of dowry and other changes in marriage practices since the 1960s in Bangladesh. Significant insights can be drawn from comparisons with changes in marriage customs in other parts of South Asia. We pay particular attention to the work of Caldwell *et al.* (1983) in the state of Karnataka in South India. We find that the shift from brideprice to dowry, the rise in male advantage in the marriage market, and the increase in the value of dowry payments have a common demographic cause. The rise of dowry and corresponding changes in other marriage practices have increasingly negative consequences for young women in Bangladesh.

JOUTUK (DOWRY) AND PAWN (BRIDEPRICE)

Marriage involves a range of expenses, and it is often difficult to isolate the specific component of the transaction that serves as brideprice or

TABLE 13.1 Form of Payment in Marriages from Sample of Ever-Married Women in Mohanpur, Rajshahi, 1928–1991

Type of transaction	Form of payment	Incidence of payment form	No. of cases
Brideprice	5–12 items of jewellery either gold or silver; sari for bride; sweets; betel nuts and betel leaves; cash		45
Dowry	(Dowry may be one or a combination of the items listed below for any given case)		95
	Agricultural land	3	
	Livestock (cow, goats, etc.)	14	
	Bicycle	10	
	Motorcycle	1	
	Radio/cassette player	10	
	Television	1	
	Jewellery for bride (one or more items of gold or silver nose-pin, bangles, earrings, necklace)	39	
	Jewellery for groom (e.g. watch or ring)	23	
	Furnishing (e.g. pots and pans, quilts, umbrella)	7	
	Clothing (sari for bride)	4	
	Cash	37	
No payment			136
Total marriages			276

dowry. In this section we describe our approach for identifying dowry and brideprice in our study area.

We have loosely translated as dowry and brideprice two well-defined local terms for transactions between families of the bride and the groom: *joutuk* (dowry) and *pawn* (brideprice). Both words are defined in general terms in the dictionary as wedding gifts received by the bride and the groom, with no clear distinction between the terms. However, local usage in our villages and elsewhere in Bangladesh does make a clear distinction: *pawn* refers to the gifts given to the bride or her family by the groom's family, and *joutuk* refers to gifts given to the groom or his family by the bride's family.

The English word 'demand' is commonly used in our study area as a noun to mean *joutuk*, in the manner noted by Lindenbaum (1981) in the Matlab region in eastern Bangladesh. This usage reflects the nature of negotiations in marriage payments. The strongly negative sentiments expressed locally about rising marriage demands suggest that it is unpleasant to be faced with such demands and that it was an element absent in the past. Even though both dowry and brideprice are

non-trivial transfers, the 'demands' for dowry are experienced as more harsh and substantial, in contrast to brideprice. Brideprice was more voluntary in nature—an expression of goodwill—given according to the financial ability of the groom's family, and not subject to demand or negotiation.

Although brideprice values were sometimes substantial, particularly when gifts of heavy gold jewellery were involved, there was seldom a negative consequence for failing to provide brideprice. Descriptions by villagers of marriages left us with the impression that the process of negotiation was simpler and easier in the past in contrast to the more protracted discussions that contemporary marriages entail.

Neither *joutuk* nor *pawn* incorporate the Islamic concept of *mehr* that is sometimes referred to in the literature (Lindenbaum 1981). In theory, *mehr* is a cash amount stated in a marriage contract that is roughly equivalent to the discounted present value of the spending money that the bride is entitled to over her lifetime. In practice, any gifts or jewellery given by the groom's family at the time of marriage usually count as *mehr*, which means that a sum equivalent to their value is the bride's to do with as she wishes. More importantly, they are symbolic of the level of living she will be provided by her marital family and, as such, a marker of her status in society. While a wife would never actually demand this money while she is married, it is an amount she can, in principle, demand in the event of divorce. Women usually think of jewellery as their personal asset. *Mehr* as part of the Pan-Islamic culture belongs in the realm of grand traditions, an ideal—to the extent that it is at all relevant in rural Bangladesh—whereas *joutuk* and *pawn* find their place among the little traditions. While it is formally a part of the stated marriage contract, the *mehr* is seldom of any real significance.

It is important to note that, while the practice of dowry among Muslims of Bangladesh is recent, it was common among certain high-caste Hindus, who are a significant minority group in the country. Thus, dowry exchange may incorporate Hindu cultural elements, as do most other aspects of rituals and behaviour surrounding marriage and other little traditions among Bengali Muslims (Blanchet 1984).

THE INCREASING INCIDENCE OF DOWRY IN SOUTH ASIA

The increasing incidence of dowry that we note in our study villages is very similar in timing and nature to observations in other parts of India and Bangladesh. Since dowry has traditionally been associated with some high-caste Hindus of northern India (Karve 1953), the recent focus of interest has tended to be on groups that did not traditionally practise dowry. In South India, for example, Caldwell *et al.* (1983) focused on the

rising prevalence of dowry among non-Brahmin castes in rural areas of Karnataka, and Rao (1993) reported the same thing in Maharashtra and Andhra Pradesh. In northern India, Sharma (1980) observed a general emergence of dowry in communities that had practised brideprice in the states of Punjab and Himachal Pradesh, and a considerable value inflation of dowry even among groups in these areas that have always practised dowry. Lindenbaum (1981) observed the rise of dowry among Muslims in the Comilla district of Bangladesh and described it as a recent phenomenon in the early 1970s. She also noted that some dowry exchanges were observed in Tangail district from the early 1960s.

In populations where there are multiple caste groups, the pace of change has been different for different castes and appears to be related to marriage rules of caste and kin endogamy and marriage distance. There is evidence of urban to rural diffusion. Caldwell *et al.* (1983) describe dowry payments first emerging in urban areas and then spreading to rural areas. Sharma suggests that a similar pattern of urban to rural diffusion occurred in Himachal Pradesh.

The transition from brideprice to dowry in most rural South Asian communities occurred in the 1960s. This was also a time of more general change: agricultural modernization in the Punjab, increasing exposure to the Western world through Western imports in Bangladesh, and increasing educational and occupational diversity in South India. The increasing incidence of dowry has been variously interpreted, but is usually ascribed to the dominant type of economic change in the particular context being studied. In the next section we will examine some of these interpretations.

REASONS FOR THE EMERGENCE OF DOWRY

Explanations for the rising prevalence of dowry in South Asia vary widely in their emphasis on economic, social, and demographic forces of change. In this section we review a selected set of explanations that have been put forward.

The Economic Contribution of Women

Efforts to explain why brideprice was common in many African societies while dowry was typical of Asia focused on differences in agricultural practices (hoe versus plough cultures) and associated differences in women's economic roles. Bridewealth is given in societies where women do most of the agricultural work to compensate their birth family for the loss of female labour, while dowry is given to compensate men for providing sustenance to women in societies where there is no market value for women's labour (Boserup 1970). Regardless of its merits elsewhere,

this line of interpretation is not directly helpful as a general explanation for the shift from brideprice to dowry in South Asia, because there has been no concomitant change in mode of agricultural production or in women's roles in agriculture.

Research in Punjab and Himachal Pradesh in India (Sharma 1980) finds some support, however, for interpreting marriage payments as compensation for the loss of female labour as an explanation of dowry for idle high-caste women and brideprice for low-caste, working women. In Punjab, the rise of dowry may be attributed to the increasing prosperity of peasant cultivators because it has led to a withdrawal of women from agricultural labour. However, in Himachal Pradesh the shift from brideprice to dowry cannot be readily explained by a compensation theory, since women's economic contribution to the household, if it has changed at all, has increased. In this setting, Sharma endorsed the idea that the rising incidence of dowry among the lower classes reflects 'greater conformity to the classical ideal of *kanya dan* (the most prestigious form of marriage in the Hindu tradition), the gift of a virgin in marriage against which nothing whatever is accepted in return from the wife-takers' (Sharma 1980: 139). This is driven by a desire to emulate the life-styles of the upper castes. However, even the highest-caste Brahmins in Himachal Pradesh traditionally practised brideprice. If emulation of a different cultural ideal is the reason for the rise of dowry, it must have been an ideational import as a result of migration of men to other areas where the practice existed.

Neither explanation, however, can adequately account for the tremendous dowry inflation that has taken place in these settings. Sharma's respondents offered marriage squeeze—i.e. a surplus of eligible women—as their explanation for dowry inflation. Sharma reviewed the evidence on overall sex ratios, which show a deficit of women, and rejected the demographic explanation.² She proposed, instead, a new twist to the compensation theory of women's work: while women work hard, their work does not reduce their dependence on men for cash. Until such time as women enter the cash economy, dowry will persist, since it is best viewed as compensation to men for taking on the burden of maintaining women. This explains why men with better earning abilities can command higher dowry, as well as why over time there has been dowry inflation.

The Reproductive Value of Women

Rajaraman (1983) considers the general rise of dowry in India and proposes an explanation of dowry that emphasizes the reproductive role of women, based on a model in which dowry is a function of the market labour value of women, i.e. the value of a woman's domestic work and reproductive capacity, net of the cost of maintaining her. She argues that, since the market value of women has increased along with rising dowry,

the dowry inflation must be attributable to changes in the other factors that contribute to women's worth. She suggests that a diminution of the value of women's reproductive capacity and domestic work can explain the dowry inflation.

Lindenbaum (1981) explains dowry inflation as a product of modernization: rising earnings potentials of men in a cash economy and rising consumerism. On the one hand, dowry reflects the imbalance created by the enhanced earnings of grooms, which 'now surpass the previously valued attributes of brides'.³ The dowry inflation reflects the increasing importance of cash income and of those who can generate it. Lindenbaum argues also that increasing consumerism and the rising age at marriage result in girls being an increasing financial burden on their families, because they not only spend a significant part of their adolescence at home, but also have a taste for consumer items from the West. The nature of gifts demanded at marriage also reflects the increasing availability and demand for consumer goods from the West.

Both Rajaraman (1983) and Lindenbaum (1981) discussed how the increasing earning potential of men combined with unchanging earning potential of women can give rise to the spreading practice of dowry. Since education is one way of gaining access to greater income-earning opportunities, a rise in the education of males has also been linked to the rise of dowry.

The Marriage Squeeze

A common characteristic of several of the early explanations of the change in marriage payment described thus far is rejection of a surplus of eligible girls as a causal factor. Caldwell *et al.*'s (1983) research in Karnataka, however, gave prominence to the role of demographic surplus, or a marriage squeeze. While the overall sex ratios did not show an excess, the sex ratios for age ranges appropriate for marriage show a considerable excess of marriageable girls. This excess is explained by declining mortality (which creates younger cohorts that are larger than older cohorts) combined with a norm of men marrying younger women.

This marriage squeeze is consistent with the timing of the increasing practice of dowry, which occurred approximately twenty years after mortality first began to decline. Rao (1993) examined data from the southern Indian states of Andhra Pradesh and Maharashtra and also found evidence that a marriage squeeze caused a rise in dowry.

OTHER CHANGES IN MARRIAGE PRACTICES

An increase in the incidence of dowry is one of several possible responses to a marriage squeeze. In this section we discuss other changes

in marriage practices that took place simultaneously with rising dowry demand in two settings, Karnataka and Bangladesh. Marriage market responses that have been considered are: changes in age at marriage, resulting in a convergence of ages of brides and grooms; a change in the incidence of multiple marriages by men, in the form of either polygyny or serial monogamy, both of which accommodate the excess of women of marriageable age, but with negative implications for women's status; changes in the practice of village and kin endogamy, with consequences for age difference in marriage and the prospects of marriage viability; and changes in marriage expenses other than dowry or brideprice.

Marriage Patterns in Karnataka

Caldwell and colleagues found two additional aspects of marriage to be related to the rise in dowry. First, he noted a trend of rising age at marriage for girls and falling age at marriage for men, leading to a reduction in the average age difference between spouses. This convergence of ages at marriage served as a correction to the marriage squeeze by reducing the excess of potential brides that gave rise to advantages for men and to the practice of dowry. Caldwell *et al.* (1983) also found a simultaneous reduction in the prevalence of kin and village endogamy, which they attributed, at least in part, to the rise of dowry demand. Kin-endogamous marriage, which was traditionally the preferred form of marriage, is becoming less popular because dowry exchanges are not allowed in such marriages—when a man marries within the family he has to forgo dowry. The greater general openness of society has also provided a wider set of potential partners to choose from and may also have contributed to the diminishing importance of arranged marriages. Since the traditionally preferred marriage partner for a man was his sister's daughter, these marriages usually entailed large age differences between spouses. The delayed frequency of such marriages also contributes to easing the marriage market squeeze.

Caldwell *et al.* (1983) suggest that, although rising dowry values mean that daughters cost more, thus, possibly rendering them less desirable to parents and more subject to neglect. The process of adjustment in the marriage market has been rapid and various 'safety valves' have opened to vent the pressure on girls. The adjustment is substantial: the age gap between spouses is being reduced by about one year per decade. Raising a dowry requires time and seems to increase the age of girls at marriage. The increasing prevalence of marriage with non-kin, and a generally more heterogeneous group of potential marriage partners, results in an extended search process, and also contributes to delayed age at marriage for girls.

TABLE 13.2 Ratio of Males to Females in Marriage Age Groups in Bangladesh, 1950–2000

	(1) Girls 10–14/ Boys 20–24	(2) Girls 15–19/ Boys 20–24	(3) Average of (1) and (2)
1950	1.18	1.02	1.1
1955	1.21	1.06	1.14
1960	1.25	1.11	1.18
1965	1.32	1.12	1.22
1970	1.55	1.15	1.35
1975	1.54	1.31	1.43
1980	1.34	1.12	1.23
1985	1.38	1.14	1.26
1990	1.31	1.15	1.23
1995	1.21	1.09	1.15
2000	1.12	1.03	1.08

Note: 1950–85 based on population estimates; 1990–2000 based on medium-term projections.

Source: United Nations (1994).

Marriage Patterns in Bangladesh

In Bangladesh, as in Karnataka, we find evidence of a surplus of women relative to men of marriageable age beginning in the 1960s. The timing of demographic change in terms of population growth was approximately the same, or perhaps slightly later in Bangladesh. Table 13.2 shows a rough estimate of the excess of marriageable women over men. The data on age at marriage and number of persons enumerated by age group are taken from United Nations (1994) estimates. Since the mean age at marriage for girls ranged between 14 and 17 during this period, we consider the number of girls in the age groups 10–14 and 15–19. The average age difference is around seven or eight years and men rarely marry before the age of 20, so we consider men aged 20–24 for an approximation of eligible men in the marriage market. Assuming that the true eligibility ratio lies midway between the two ratios, in 1950 there was an excess of girls of only 10 per cent, rising to 22 per cent in 1965 and 43 per cent in 1975, then falling to 26 per cent in 1985 and further to 15 per cent in 1995.

The age difference in marriage in Bengal has historically been similar in magnitude to that in Karnataka (Mysore). However, the average age pattern of marriage is earlier in Bengal for men and women than for Karnataka, as shown in Table 13.3. Wilson and Dyson (1992) attribute the relatively high marriage age differences in South India to the preference for certain categories of kin-endogamous marriages (men marry their sisters' daughters), whereas all over North India marriages within kin groups are usually not permitted. In Bengal, kin endogamy is not

TABLE 13.3 Age at Marriage in Bengal and Mysore (Karnataka), 1891/1901–1941/51^a

	Mysore	Bengal
1891–1901		
Male	24.46	18.92
Female	14.84	11.16
Age difference	9.62	7.76
1901–11		
Male	24.52	22.72
Female	15.18	11.67
Age difference	9.34	11.05
1911–21		
Male	25.11	21.58
Female	15.07	11.92
Age difference	10.04	9.66
1921–31		
Male	23.74	18.24
Female	14.76	10.55
Age difference	8.98	7.69
1931–41		
Male	24.45	22.54
Female	15.87	13.80
Age difference	8.58	8.74
1941–51		
Male	24.85	21.75
Female	15.99	14.30
Age difference	8.86	7.45

^a Figures for 1891–1901 in Bengal include Bihar and Orissa with lower means for males and higher means for females on average.

Source: Agarwala (1962).

allowed among Hindus, and although allowed among Muslims it is not widely practised.

The similarity in timing of the marriage squeeze described in Table 13.2 and the increase in prevalence and inflation of dowry in Bangladesh provide strong *prima facie* evidence for the thesis that the two processes are causally related. This agrees with the perception in village society that the rising prevalence and inflation of dowry is a product of the surplus of eligible girls in the marriage market, reported by Lindenbaum (1981) and also found in our study site in northern Bangladesh.

However, the three other ways that marriage conventions and patterns appear to have changed in Karnataka in response to the marriage squeeze—lowering male age at marriage, increasing female age at marriage, and decreasing kin endogamy—are conspicuously absent in Bangladesh. As shown in Table 13.2, male age at marriage rose at the same time as female age at marriage, leading to a reduction in the age difference in

TABLE 13.4 Proportion of Rural Ever-Married Women Who Have Always Lived in the Village they Resided in at Time of Interview, 1989 Bangladesh Fertility Survey (%)

Age	Chittagong	Dhaka	Khulna	Rajshahi
< 20	38	45	44	41
20-29	30	32	35	32
30-39	24	27	30	28
40+	25	26	26	26
All	28	32	34	31
N (all)	2091	2535	1791	2049

marriage of only 1.5 years—about half the magnitude of reduction in age gap reported for Karnataka by Caldwell *et al.* (1983). Age-at-marriage changes in Bangladesh are probably attributable to exogenous shifts in the education of boys and girls and the imposition of legal minimum age at marriage, and not as a response to the marriage market. It is generally agreed that the most dramatic increases in female age at marriage have occurred because of the decline in child marriages. This is supported by evidence that changing age at marriage has had little effect on age at first birth, precisely because the changes affect a sub-fecund age group (Cleland and Huq 1990).

Village Endogamy

An examination of the level of village endogamy provides some evidence of one way in which the situation in South India is different from Bangladesh, and may explain why the response to similar demographic stimulus (the marriage squeeze) is also different.

Unlike Karnataka, where the ideal marriage partner for a girl is her mother's brother, there is no such preference for marriage within kin group (endogamy) in Bangladesh. There is, however, considerable village endogamy. As shown in Table 13.4, approximately 30 per cent of all women are married to men from their own villages.

Comparing across cohorts using national data, we find the level of endogamy rising for more recent cohorts. Since endogamous marriages tend to involve less or no dowry, rising village endogamy may be a response to the rise of dowry. Whereas in Karnataka Caldwell *et al.* (1983) found a decrease in kin endogamy, we find an increase in village endogamy. As reported for marriages in Karnataka, and according to our findings in Bangladesh, for marriages within both the family and the village, the level of dowry expected and given is less than for exogamous marriages. Table 13.5 shows that marriages within a village are less likely to entail a large transaction, be it brideprice or dowry.

TABLE 13.5 Value of Gifts Exchanged at Marriage, Mohanpur, 1991

Year of marriage	Value in kg of rice (no. of cases)	
	Married outside of village	Married in village
Before 1965	-181 (35)	-95 (31)
1965-79	374 (43)	37 (25)
1980-91	378 (51)	149 (34)

Note: Gifts from bride to groom's family are a positive flow and gifts from groom to bride's family are a negative flow; value of gifts exchanged were recorded in *taka* at time of marriage and deflated by the price of rice per kg at that time.

In Bangladesh, parents will choose to marry their daughters within the village in order to avoid paying dowry, and poorer parents are more likely to pursue this option. While in this way marriage rules may have responded to the marriage squeeze, the response, in contrast to what Caldwell and his colleagues found in Karnataka, does not reduce the average age gap and thus does not serve as a mechanism to ease the marriage squeeze. Choosing a groom within the village reflects a conscious decision to invest less in a daughter's marriage; a less intensive search for a suitable groom means also that many parents are opting for convenience and savings, perhaps at the expense of their daughters' welfare.

A marriage partner from within the village has always been the inferior choice from the perspective of both parents and communities, since reports of marital discord and friction, which are common during the early period of marriage, can reach the bride's family quickly. Such disputes then have to be settled in village *shalish*, a community hearing where leaders sit in judgement after hearing both sides of the story and the opinions of others. Marital discord can thus more easily lead to tensions within the community.

Marriage Age Difference

Cain (1984) suggests that the large age differences between spouses found in Bangladesh contribute to the high degree of patriarchal control. Large age differences between spouses, particularly when the bride is little more than a child, *ceteris paribus*, can increase the level of awe in the bride and her deference towards the husband-god (*poti-debota*) that is idealized in Bengali culture. In this regard too, the situation in Bangladesh represents something fundamentally different from that found in South India, where age differences are also large, but result from a preference for marriages between a man and his sister's daughter. A bride is less likely to be intimidated by a husband and in-laws who are her kin

TABLE 13.6 Average Age at First Marriage of Women by Marriage Distance, Mohanpur, 1991

	Age at first marriage	N
Married in village	14.2	314
Married in union but not village	14.3	172
Married in <i>thana</i> but not same union	14.6	152
Married in district but not same <i>thana</i>	14.8	173
Married outside district	15.3	46

Note: Union, thana, and district are administrative units; district is subdivided into *thanas*, *thanas* into unions, and unions into villages.

and whom she has known all her life, and this will compensate for the status differences associated with age. A woman in such a marriage is also likely to be in familiar surroundings and therefore more assertive.

While it is likely that the trends in endogamy and dowry in Bangladesh are both connected to the marriage market squeeze, there is little evidence that these trends are in turn producing a reduction in age differences of spouses and therefore easing the marriage squeeze in the manner described by Caldwell and his colleagues for Karnataka. Table 13.6 shows age at marriage for women by marriage distance. There is a slight increase in the average age at marriage by marriage distance, although the difference is very small.

TRENDS AND CLASS DIFFERENTIALS

The demographic pressures on the marriage market are already showing signs of easing (see Table 13.2). The initial excesses were large for two reasons: the relatively small size of birth cohorts of the 1940s (owing, most likely, to the 1943 Bengal famine), combined with a relatively large birth cohort of the following decade. For subsequent cohorts, the ratio is more even. Slower population growth has contributed to reducing the imbalance further. While it is difficult to imagine a decline in the incidence of dowry now that it has become an established social practice, there may be signs of relief in other aspects of the marriage market.

Although the marriage squeeze has affected all classes, the response of different classes varies a great deal. Some of this variation has been noted in the literature on dowry. Lindenbaum, for example, noted that dowry is more prevalent among richer families and those with better occupation and job opportunities. It is a mistake, however, to look for class-specific explanations for the increased prevalence of dowry. Class differences are more appropriately viewed as differentiated responses to a common stimulus, the marriage squeeze. While the rich can 'buy their

TABLE 13.7 Proportions of Women and their Husbands Married More than Once by Landholding, All Ever-Married Women, Mohanpur, 1991 (%)

Woman's age	Poor (< 51 decimals landholding) ^a			Not poor (> 50 decimals landholding) ^a		
	N	Women married > 1	Husbands married > 1	N	Women married > 1	Husbands married > 1
< 20	85	8	22	42	0	19
20-29	212	14	37	153	10	31
30-39	115	34	54	109	11	35
40+	113	33	51	221	21	39

^a 100 decimals = 1 acre.

TABLE 13.8 Proportions of Marriages Involving a Dowry, Mohanpur (Sample of Ever-Married Women)

Year of marriage	% of marriages involving a dowry	N
Before 1964	10 ^a	67
1965-79	38	68
1980-91	59	85

^a Among the five marriages reported as dowry marriages on or before 1964, three reported amounts (equivalent to 12, 15 and 22 kg of rice) considerably lower than brideprice for that period, or dowry reported for later years; two reported their own land inheritance as dowry, which we have not included in our definition of dowry.

way out', the poor must resort to a variety of other strategies. Some of these are more palatable than others. Finding a groom within the village is perhaps the least objectionable. A second response to the marriage squeeze, which holds more negative prospects for the institution of marriage, is multiple marriages by men. The poor are much more likely to experience marital instability in this regard. Table 13.7 shows that the proportion of women and their husbands who have been married more than once varies dramatically by age, as would be expected, but also by landholding status, an important marker for economic status in these villages. The other side of multiple marriages, because polygyny is rare, is divorce, also more common among the poor.

It is significant that, although the proportion of marriages involving a dowry has increased for recent marriages—59 per cent in marriages since 1980, compared with 38 per cent for marriages between 1965 and 1979—even now, a large number of marriages involve no transaction (see Table 13.8). Serial monogamy and divorce serve as ways of accommodating an excess of marriageable-age women by reducing the aggregate time spent by women in the married state relative to men.

Other Marriage Payments

We have limited our discussion thus far to the specific part of marriage transaction that is referred to as dowry or brideprice. There are other, often significant, expenses related to feeding the community or *shomaj*⁴ and paying for festivities surrounding the event. A family will often rent a loudspeaker for several days, and put it to round-the-clock use.

These other marriage expenses vary by region, but can be equivalent to the expenses incurred in dowry or brideprice. Expenses related to marriage celebration or 'solemnization' can be an important investment in the stability of the marriage. Here again, a poor family can choose to minimize expenses, but only at some risk. An example from our study village serves as an illustration. Kofiluddin gave his daughter in marriage with no solemnizing ceremony. The groom's family agreed to an unceremonial marriage because Kofiluddin promised to give a television set worth Tk.10,000, a sum somewhat larger than the typical dowry value. After several months of marriage, when Kofiluddin had failed to raise the money for the television set, the marriage began to break down and the bride was returned to her family by her in-laws. Even though Kofiluddin did not have the money for dowry, he sought the support of the community to reach a reconciliation with the groom's family. However, since the marriage had not been properly solemnized in the eyes of the community, the village elders offered no support. Had the marriage been proper, the recourse for the bride's family would have been a reconciliation mediated by the *shalish*, where they could count on the support of their own *shomaj*.

CONCLUSION

A change as striking as the transition from brideprice to dowry which we have described for the two Rajshahi villages, and which has been so widely documented in other parts of the subcontinent, naturally invites an interpretation focusing on the changing status of women. And, indeed, many of the explanations offered in the literature have focused on perceived shifts in the market value of women—both the labour and marriage markets. On the basis of our analysis for Bangladesh, we concluded that a demographically induced shift in the marriage market largely explains the rising prevalence of dowry in that society. However, the existence of other responses to this demographic stimulus—an increase in marriages between partners from the same village, for example—and the class bases of these differences in response point to a more important truth: that these changes in marriage practice have occurred within a system of patriarchy which remains largely unchanged, and that class-specific responses to the demographically induced 'marriage squeeze' reflect the workings of interlocking sex- and class-based hierarchies which

together act as a powerful source of resistance to change (see Cain *et al.* 1979). Men and the relatively wealthy remain dominant, and women and the poor bear a disproportionate share of the costs of social (and demographic) change.

In South India, where the patriarchal system is weaker, the increasing incidence of dowry has apparently induced a compensating rise in female age at marriage, a drop in male age at marriage, and thus a narrowing of the age gap between spouses. This positive feedback promises to correct the demographic imbalance that caused the rise in dowry demand in the first place. No such adjustment is evident in Bangladesh, where, as one would expect of a strong patriarchal regime, the large age difference between spouses has remained large. The adjustment, instead, is found in a series of practices that systematically disadvantage women and the poor: a rise in village endogamy, an increasing vulnerability of women to capricious divorce (as evidenced in Table 13.7), the tolerance of multiple sequential marriages by men, and an increase in polygynous unions in which wives cannot be properly taken care of. (For other comparisons between Bangladesh and South India, see Cain 1981, 1986.)

Dowry itself has its own evils. 'Bride burnings' and less drastic forms of abuse of young wives in response to failed promises of dowry, or as a way of extorting more dowry, are examples. The rise of dowry arguably has a pernicious effect on young girls by increasing their costs in the eyes of parents, perhaps resulting in their abuse or neglect. Ironically, however, dowry is something that is most likely to be an issue for the relatively well off. The greater depredations are felt by women whose families cannot afford dowry payments for them. The narrow policy focus on eliminating dowry thus can be seen to be misguided. It requires a larger lens—one that can take in the underlying institutional context of class and patriarchy—to see this.

NOTES

1. Since rice is the major staple and the dominant crop in the area, the price of rice is considered an appropriate price deflator (Khan and Hossain 1989).
2. Epstein (quoted in Caldwell *et al.* 1983) and Srinivas (quoted in Rao 1993) similarly rejected the idea of a demographic surplus of women after reviewing trends in overall sex ratios for women. However, as Caldwell *et al.* (1983) pointed out, the relevant sex ratio is that of *eligible* men and women, not the population sex ratios.
3. She rejected the explanation given by her respondents that the rise in dowry was a result of the numerical surplus of young women in the 1960s.
4. Each household belongs to a *shomaj* in the community. Elders of a *shomaj* can hold hearings, or *shalish*, in disputes involving their members. There can be several *shomaj* in a village, and the *shomaj* of a *thana* (district) are usually

connected to each other through an informal federation. Disputes between households in different villages are usually mediated by a *shalish* made up of elders from different *shomaj*, provided the households have invested the appropriate social capital with their own *shomaj*.

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Underinvestment in Children: *A Reorganization of the Evidence on the Determinants of Child Mortality*

ALAKA MALWADE BASU

The pace of the mortality transition in much of the contemporary developing world will be determined by the pace of improvements in child survival. Not only are levels of child mortality relative to adult mortality high in comparison with historical populations with similar life expectancies at birth, they are also affected by a much more complex set of factors than the traditional influences on adult survival. In particular, research seems to suggest that reductions in child mortality require strong will as much as material resources.

This conclusion that the will is important—whether the will of the family, of society, or of the state—has emerged particularly powerfully from the relatively recent development of the sub-discipline of anthropological demography, and this paper tries to develop a revised framework of the determinants of infant and child mortality informed primarily by the findings of this branch of research. In the process, it also focuses on the real and potential contribution of this method of research to our understanding of the determinants of infant and child mortality, subjects that were for a long time believed to be sufficiently captured by structured surveys and epidemiological analyses of biomedical information. In addition, and perhaps more importantly, it looks for the weaknesses in this brand of research as it relates to the subject of infant and child mortality. This negative attitude is an attempt to take stock and to redress the balance; micro studies, after an initial period of hesitancy, are now almost a part of the establishment and need an occasional reevaluation if they are not to degenerate into just another mechanically replicated form of research.

Instead of identifying the proximate determinants of child mortality (in the spirit of Mosley and Chen 1984), the output from the anthropological-demographic literature on this subject is used to categorize the influences

I am grateful to seminar participants in general and to Sheila Ryan Johansson and Geoffrey McNicoll in particular for several comments which improved the paper. I would also like to thank Nalini Ranjit for research assistance and for many useful suggestions in the writing of this paper.

on child mortality in terms of different kinds of underinvestment in children. Such a framework is more easily able to accommodate the diverse socio-economic and cultural constraints on Mosley and Chen's (1984) proximate determinants, partly because the proximate determinants-child mortality equation is itself so conditioned by other circumstances.¹ In addition, this framework allows one to distinguish more effectively between the more and less effective policy instruments to hasten the transition in child mortality.

However, some of the proximate determinants of childhood mortality appear to be more 'real' or 'biological' than others, so it is worthwhile to precede the underinvestment framework by a separate discussion on these biological determinants of risk. This discussion also highlights the anthropological contribution to the unpacking of these so-called biological factors of risk, so that they ultimately get smoothly absorbed into the underinvestment framework under which the remaining proximate determinants are subsumed.

I tend to focus on the South Asian region, at least partly because it is so richly amenable to inquiries of the anthropological type. To the untrained eye, here is this vast mass of humanity, united in the way its conduct of daily life is so governed by centuries-old traditions, norms, and philosophical attitudes, with changing circumstances being accommodated by an adaptation of these traditions, norms, and attitudes rather than an abandonment of them. To the trained observer, the region is even more exciting because this common hold of tradition does not mean a common tradition. It hides a multiplicity of cultures and subcultures, so that it provides an almost laboratory situation for understanding the ways in which different, but relatively stable, ways of life lead to very different outcomes (demographic outcomes in this case). And to the demographic reformer, it provides the additional challenge of resisting more conventional and straightforward ways to manoeuvre its laggardly demographic behaviour.

THE 'BIOLOGICAL' DETERMINANTS OF CHILDHOOD MORTALITY

The biological, as opposed to the medical or behavioural, circumstances of a pregnancy or birth have been shown by traditional, large-scale demography to have a strong impact on the chances of survival. Biological factors that influence the risk of death include the parity of the child, its sex, the age of its mother at the time of its birth, its preceding and succeeding birth interval, and its birthweight. While all these characteristics are in turn affected by a number of cultural and socio-economic factors, the characteristics themselves are believed to have a largely straightforward 'biological' link to mortality. That is, other things remaining the same, each

of these characteristics can be associated with a universal relation with child survival, and in many cases one can also postulate the biological mechanisms through which this relation operates. For example, the maternal depletion syndrome can affect poor pregnancy and birth outcomes for high-parity births; maternal biological immaturity or decay can explain the higher risks faced by the children of very young or old mothers; and poor host resistance can explain the special death risks of low-birthweight babies.

For these reasons, it may be useful to separate the biological correlates of child survival from the other proximate determinants of the Mosley-Chen (1984) framework which are reorganized in the 'underinvestment' framework developed below. But such a physical separation in the format of this paper by no means implies an uncritical subscription to the biological thesis of child death. An invaluable and still not fully appreciated contribution of anthropological demography has been to demonstrate that many of these biological predispositions to death are in fact only partly biological. Much of their lethal impact can be traced to behavioural factors more suited to inclusion in the underinvestment framework, so that the children with these high-risk biological characteristics are actually at greater risk because their biological risks are compounded by (and sometimes perhaps even explained by) their social risks. That is, large-scale, statistical associations can unduly inflate the biological risks of some characteristics. This is an issue pregnant with policy implications, albeit in more unconventional ways than traditional demography tends to favour.

Several examples can be found of this mediating role of underinvestment in the relationship between biological characteristics and child deaths. The few provided here are meant only to provide a flavour of the possibilities in anthropological-demographic research in this area.

Take the question of birthweight. There is now some debate in the demographic literature on the relative contributions of low birthweight and prematurity (which are themselves so strongly associated with each other) to poor infant survival outcomes. However, this debate assumes that both low birthweight and prematurity are indicators of greater 'biological' risk. It is still to be informed by the evidence from anthropological studies, for example from Latin America (see the discussions in later sections of this paper), that one kind of child that suffers deliberate neglect from parents is often the underweight, listless newborn. Such neglect may be imposed because the child is not expected to live, and/or because it is not wanted alive; in either case, the final result for the infant is often an inability to survive, so that the macrostatistics confirm a strong relationship between birthweight and child survival.

Similarly, there is the higher risk of infant and child mortality associated with very young mothers. Is there really such a large time gap between

puberty and good reproductive ability? Or is there something in the vast anthropological literature which suggests that young mothers themselves are handicapped because the circumstances of their pregnancy are not suited to their investment in their children? For example, the age of the mother may often be less important than her social status and the social support that she can gather for her pregnancy, childbearing, and child-rearing experience in Africa (see National Academy of Sciences 1993). The young mother who has an acknowledged father for her child is more likely to end up with a child that is wanted by her and therefore invested in, and also a child that larger kin networks are willing to co-operate in investing in. The statistical relationship between maternal age and child survival may be biased because the data used over-represent young mothers who, socially rather than biologically, are not ready for childbearing. Indeed, even formal demographic research is now more aware of such confounding non-biological factors. Teen pregnancy and poor child survival outcomes are increasingly attributed at least in part to the weak economic and social status of young mothers, even in analyses of large data sets (see e.g. Geronimus 1987).

The birth interval may also be less important biologically than standard WFS and DHS kinds of analysis imply. For example, Scrimshaw (1978) concluded from her work in Ecuador that the strong impact on child mortality of the preceding birth interval was probably because the family with a closely spaced pair of children found it more worthwhile to invest in the first child, who had already survived the critical first year, than in the newborn, whose future was in any case uncertain.

These few examples highlight an important contribution of anthropology and anthropological demography to the demographic wisdom on the biological basis of risk and have much more robustness than the general nature *v.* nurture debate in cultural anthropology. They also emphasize that the idea of the proximate determinants of child mortality may be a practical accounting procedure rather than a description of really proximate determinants. It seems that there are often other, not necessarily biological, intervening variables even between the biological proximate determinants and child mortality.

THE UNDERINVESTMENT FRAMEWORK

The following outline presents an alternative way of organizing the determinants of infant and child mortality, based on the dominant findings of research in anthropology and anthropological demography. This research is not all in the area of infant and child mortality; indeed, the strength of the method of anthropological demography is that research findings in areas without an ostensible connection to childhood mortality

can very usefully feed into our understanding of the determinants of childhood mortality.

Anthropological Framework of the Determinants of Infant and Child Mortality

1. Biological circumstances of pregnancy and childbirth
2. Underinvestment in infants and young children
 - (a) Underinvestment by
 - (i) The family
 - (ii) The state
 - (b) Underinvestment in
 - (i) All children
 - (ii) Some children
 - (c) Underinvestment of
 - (i) Attention
 - (ii) Food
 - (iii) Safe environment
 - (iv) Preventive health care
 - (v) Curative health care
 - (d) Reasons for underinvestment
 - (i) Lack of information
 - (ii) Inadvertent circumstances
 - (iii) Deliberate neglect

The use of the term 'underinvestment' is unfortunate only because it implies something strategic or volitional, whereas its meaning here is supposed to include a range of behaviours that are not related to *wanting* worse child survival outcomes. But it is used here for several reasons, only one of which is the inability to find something more suitable. For one thing, much of history and much of the contemporary world have been characterized by high infant and child mortality. It therefore makes more sense to look at the household and societal basis of *high* child mortality, before drawing complementary lessons from the experience of low-mortality-experiencing societies or families. At a deeper level, however, these are admittedly two sides of the same coin.

Second, the very recent and still limited experience of low child mortality suggests that this achievement requires much investment in children, whether such investment is deliberate or unplanned. The natural order of things seems to be for young children to die if left to their own devices, and perhaps for young children to die more easily without investment than for the young of other species. Third, the concept of investment is useful because it is open-ended. It can be elaborated by looking at different kinds of investment and different amounts of investment, so that

the general term is a good umbrella under which the complexities of child mortality can be unravelled.

But, as already mentioned, the word 'underinvestment' is not used in its frequent, narrow strategic sense. That is, it is a neutral term and can accommodate a range of behaviours, both conscious and inadvertent, and both societal and individual. Therefore, the above outline breaks up the concept of underinvestment in children in many ways.

Part (a) distinguishes between underinvestment by the household and underinvestment by society or the state. In turn, part (b) distinguishes between underinvestment in all children and underinvestment in some selected children. Part (c) distinguishes between underinvestment in different kinds of input into child welfare. And part (d) distinguishes between the origins or motives or causes of underinvestment, and identifies three major influences. These are all interrelated and often overlap in parts, but they are still worth separating out because they imply different compulsions and call for different responses.

It is part (d) that merits the longest discussion,² and I therefore skim over parts (a), (b), and (c) before plunging into that section.

Underinvestment By Whom?

Very broadly, children may be underinvested in by the family and by the larger community or state. Most of the following discussion on underinvestment concentrates on the family (or the larger kin group), because that is the focus of much of anthropological demography in this area. As the later sections stress, however, this is a shortcoming of this kind of research. Not enough attention is paid to the direct and indirect role of the state in particular in promoting or hindering investment in child survival.

But of course, the state and society at large can and do determine the kind and amount of underinvestment in children through acts of omission and commission. A legion of examples can be produced. To take just a couple, state investment in health care and clean drinking water can have a major impact on child mortality levels. Similarly, formal systems of childcare for working mothers can have a profound impact on child welfare because they often replace low-quality care by substitute caregivers in the home and sometimes even replace a situation in which there is no alternative care-giver and children are left pretty much to themselves or are carried to risky work environments.

Most examples of state abdication of responsibility for child mortality refer to its role in the mortality risks of all children. But even when there are intra-household differentials in child mortality risks, this need not always imply differential investment by the family alone. The state can abet such differential investment in many ways. A commonly stated

example is the state's inability to value or to provide health care services that are female-friendly, so that female children are more likely to receive delayed or no health care because a culture does not care for them to be examined by male doctors or paramedics.

Underinvestment in Whom?

Even within the same home, children do not all face the same level and kind of underinvestment. All kinds of things seem to matter—age, sex, birth order, talents, appearance, the life-cycle stage of the household, and so on. While some of these differentials in investment are conscious or strategic, differential risk does not automatically imply strategy. Selective underinvestment may be inadvertent, because it may arise out of ignorance, out of a blind or forced compliance of norms that promote selective underinvestment, or out of the changing circumstances of households as they go through their life cycle, so that different amounts of time, material resources, and abilities are available as different children pass through similar stages of their own lives.

Other kinds of underinvestment may apply equally to all children within a family, resulting in what one may refer to as a level of 'natural' mortality, analogous to the concept of natural fertility, in which underinvestment is 'anonymous'; that is, it does not depend on the identity of the child that is being underinvested in. Such underinvestment is more often a function of familial abilities and information and less a matter of conscious choice, just as non-parity-specific behaviours affecting fertility are usually not dictated by choice.

Underinvestment in What?

This is the closest the underinvestment framework gets to what may be called the proximate determinants of child mortality (see e.g. Mosley and Chen 1984), and one may identify a few important areas, a skimping on which can increase the chances of child death. These include food, exposure to accidents, exposure to disease, and what Mosley and Chen (1984) call personal illness control (which includes health care for preventive and curative reasons). All these forms of investment have an impact on child mortality outcomes, but the impact is often not a straightforward one in practice, because it is very easily modified by other circumstances.

Reasons for Underinvestment

This is the meat of the matter, and under its rubric it subsumes many of the questions raised above. From a review of the anthropological demography literature relevant to the determinants of child mortality, three

broad strands of influences on underinvestment may be identified, which are related to one another but are still worth separating out for analytical purposes: the impact of knowledge, the impact of other inadvertent underinvestment for other reasons, and the impact of deliberate child neglect. The next three sections examine some of the ramifications of all three classes of influence and highlight the special contributions of anthropological–demographic research in this area.

Underinvestment through ignorance

The absence of information as one determinant of underinvestment in child health and survival is extremely poorly captured in surveys of the knowledge, attitudes, and practice (KAP) type. There are so many angles to ignorance which only the anthropological–demographic method of inquiry can capture. In particular, the approaches of anthropological demography are needed to paint a useful policy face on these many angles. A survey may tell us that the mother does not know that under-feeding during diarrhoea is bad for a child; but much greater understanding of the basis of this ignorance, and of the importance of this ignorance to design interventions, are required in order to deal with it.

Some of the best material on the role of ignorance (or, conversely, knowledge) comes from studies of groups or households that experience low child mortality, rather than from studies of incompetent or inefficient households and mothers. The big surprise is that so much misplaced or plain wrong conventional wisdom continues to characterize the low mortality achiever. For example, in spite of the very strong link between maternal schooling and child mortality, there is very little reason to expect school itself to provide correct information on health-related matters. For one thing, many of the 'educated' mothers who seem to fare so well on the child mortality front have had barely a few years of schooling, often in the strangest and most difficult of conditions, and it is unlikely that the content of this schooling went beyond imparting very basic reading and writing skills. In any case, human memory being what it is, most school experience is too far behind in time to leave much trace of actual school-acquired knowledge at the time of active motherhood.

So is the special gift of the educated mother not the information acquired in school, but the *ability to acquire* information conducive to child survival? This suggestion does not seem to be generally supported by the evidence either. For example, few studies have been able to demonstrate convincingly better levels of knowledge about the aetiology of ill health in educated mothers (for a review of the evidence on this score, see Cleland and van Ginneken 1988); if anything, such mothers are often more likely to have half-baked notions of hygiene which result in more rather than less risky behaviour (see e.g. Kaufmann 1991). Nor are such

mothers particularly less vulnerable to 'hot' and 'cold' theories of disease causation and treatment.

Similarly conventional in their knowledge are mothers in low-mortality countries such as Sri Lanka (Pieris 1994). Thus, if education or the low-mortality situation in general are not distinguished by their capacity to provide direct knowledge or the ability to acquire knowledge, can correct knowledge be nevertheless important and be acquired by other means? Here, all we have from the literature, even the anthropological-demographic literature, are some hints. For instance, does the direct experience of child mortality have some lessons to teach? Perhaps not; if anything, mothers who experience one child death are likely to go on to experience more (Das Gupta 1990; Basu 1992; Myntti 1993). At the same time, this statement should be softened by the equally convincing demographic evidence that child mortality tends to fall with birth order, at least up to a point. Could this be because the mother gains knowledge with experience, or is it because she becomes more comfortable and confident only with age and experience, her conscious information on what is good for her children remaining more or less unchanged? It seems that the latter is closer to the truth (Basu 1994).

All this suggests that the absence of scientifically sound information on health is not necessarily a barrier to sound health behaviour and that factors such as education may have larger, more diffuse, implications for childhood mortality. Anthropology in general and anthropological demography in particular have powerful policy lessons to offer the demographer in this respect. If the germ theory of disease means nothing to mothers and households, and if they can still be motivated to practise beneficial health practices, should policy be spending much time explaining these things? Indeed, policy interventions that concentrate on 'improving' the scientific knowledge of households may even misfire badly. What may succeed instead is the promotion of health practices which, even if they are not compatible with primitive ideas about disease causation, do not openly threaten such ideas. Pieris's (1994) work in Sri Lanka certainly suggests that this is possible. Modern health care here seems to coexist peacefully with traditional notions about what makes a child ill and how such illness should be handled. The intelligent medical practitioner in Sri Lanka has two alternatives. Either he provides effective modern treatment without entering into long-winded discussions with his patients about the scientific basis of his prescriptions; or, even more wisely, he uses a pluralistic form of treatment in which his modern prescriptions are combined with supplementary advice on dietary and behavioural practices which are compatible with traditional beliefs.

If this sounds like devious (or even unethical) health policy prescription, it is only because the wording is at fault. This is not a prescription for health interventions that deceives clients by lulling them into a false

sense of knowing what they are getting. If anything, it is a prescription for health interventions that try to protect health practices that are good even if they are not modern, and to protect neutral traditional health practices when these have other social and psychological benefits to offer.

In any case, what is 'correct' health knowledge? In my own study (Basu 1992), more than one cynical respondent observed that medical opinions about what is good or bad change too rapidly to be trustworthy. Indeed, we have the Wisers (Wiser and Wiser 1971) cautioning mothers just fifty years ago that a child's dysentery is aggravated by overfeeding and that in such an illness breast milk can even be fatal. In the same tone, just as there is far too little research available yet to prove the efficacy of traditional or alternative medicine, there is also far too little research available to prove that it is ineffective. And there does seem to be growing evidence that placebo effects can be real enough to actually affect the progress of an illness.

But all this is not to suggest that there is no medical misinformation that needs shedding. Such a benign attitude would be guilty of the political correctness discussed later in this paper, which finds an underlying rationale and goodness in anything that a different culture does. In particular, a case can be made for health beliefs based on supernatural forces, which preclude effective treatment when it exists and exclude effective preventive behaviour (see e.g. Azevedo *et al.* 1991). The triad of measles, chickenpox, and smallpox is the most commonly discussed in the anthropological literature on this subject. All three illnesses are associated with the visit of various goddesses in South Asia usually and are not even distinguished as separate ailments (Basu 1992; Pieris 1994). This belief has several negative implications for the infected child and accounts at least partly for the mortality related to measles and chickenpox in this region. It may also affect the acceptance of immunization against such illnesses if they are perceived as welcome visitations of the divine.³ But, once again, an effective health policy would not aggressively ridicule these beliefs; instead, it would sympathetically address them or sympathetically circumvent or accommodate them in its promotion of safer preventive and curative behaviour.

Inability to identify ill health. Finally, there is one category of information that is difficult to place in any one section of this paper. This is the question of the recognition or identification of a state of ill health. The Caldwell's work in Sri Lanka is rich with information in this area (see e.g. Caldwell *et al.* 1988). At a purely biomedical level, this recognition may be simple. But in the home of the poor, malnourished, high-risk child, it is not at all clear that states of good health and ill health can be easily demarcated. Nor is this often apparent inability to distinguish between the two a function of critical *knowledge* about symptoms. It is

rather a function of several cultural and material conditions, including the notion of pain and suffering, the notion of what is normal, the conscious or subconscious denial of illness when non-denial calls for actions that are not possible or desired, and so on. These are areas in which anthropological demography is beginning to make important inroads, and it would be unwise to dismiss such research attention because it does not seem to have an immediate positive policy relevance. As is the case for most areas of anthropological-demographic research on child mortality, the positive policy relevance may be more obvious in the longer term; moreover, in the immediate term there are important policy lessons to be drawn on what will *not* work.

Underinvestment through circumstances

Independently of the ignorance discussed earlier or the child survival goals to be discussed later, underinvestment in child survival is usually an inadvertent product of circumstances, both material and intangible. These disabling circumstances may be cultural or structural, and they make it difficult to invest effectively in child survival either consciously or unconsciously. Anthropological demography has been particularly invaluable in elucidating some of the cultural constraints on investment in child welfare. These cultural constraints may in turn affect the structural circumstances of households, as for example when they discourage women from joining the labour force and indirectly depress family incomes through such discouragement.⁴ But on the whole, their negative impact is on more intangible resources for child investment. The literature has now zeroed in on maternal abilities as one of the most crucial such intangible resources, which can have strong effects on child survival independently of the general socio-economic status of households.

What are these maternal abilities, and how are they determined? Several kinds of skills have been identified in the anthropological, demographic, and psychological literature on child welfare and do not need detailed discussion here. In the direct area of child mortality, they include the ability to nurture the child, to provide a safe environment, to recognize an episode of ill health, and to deal with such an episode so that the outcome is not death. Such abilities depend on several factors, a few of them possibly innate, although it is true that if one digs sufficiently deep one may be able to find environmental causes for what appears to be biological ineptitude. In addition, they depend on the resources invested in women in the first place, something the anthropological demography literature seems to have considered only partially. These resources include education and occupational skills, of course (and both these factors have received much attention in the literature⁵), but we know little about the impact of malnutrition and fatigue on the mother's

ability to care for her children. The maternal depletion syndrome that has been identified in the literature deals with only one cause of physical inability, repeated childbearing: it does not cover the presumably equally debilitating impact of lack of energy and alertness conferred by poverty and cultural prescriptions about food and responsibility for arduous housework, often in conjunction with arduous work outside the home.

Maternal inability to invest in child survival is also a function of other kinds of even more intangible cultural constraints. Access to information about correct childrearing practices has already been discussed and is posited to be important only in some ways. But information is not enough. Much more important seems to be the ability to use such information, an ability that depends on material resources, of course, but perhaps even more sharply on non-economic factors. This ability requires autonomy so that it may be exercised and confidence so that it may demand what it needs not just from within the home but from the more impersonal and threatening world of hospitals and medical practitioners; it also requires social esteem so that these demands are more readily met. Following the work of Caldwell (1979), there is now a large body of writing that has sometimes very innovatively, but also often very mechanically, tried to evaluate the role of such maternal autonomy and confidence in better childcare practices, and most of this information suggests that these skills do matter tremendously.

Various cultural factors which increase or decrease such autonomy and confidence in women have been identified in the anthropological demography literature, some more amenable to manipulation than others. These include women's productive roles, both actual and potential, marriage and kinship systems (see in particular Dyson and Moore 1983), inheritance rules, sexual autonomy, norms about physical seclusion, and so on. There is also the possible impact of personal experience mentioned in the last section.

Less intensively considered in the anthropological demography literature is the impact of socio-economic status, economic status in particular, on women's ability to want and get good services. While it is true that the economic status of the household may not increase women's autonomy and decision-making powers, it does seem to increase their confidence and, most importantly of all, it increases the respect that they are accorded by the outside world. That is, it is worth studying whether cultural and personal characteristics such as education increase women's domestic power, while their extra-domestic clout is more dependent on the power of money and on their household's position in the social hierarchy.

The other important resource that needs to be invested for child survival is time. Quite apart from its importance for child development, the activities that ensure child survival—feeding, preventive health care, the

recognition of illness, and curative health care—all require someone to have the time to perform these activities. There is much interest now in the quality and amount of time invested in childcare by the mother or other care-giver, and the anthropological demography literature has contributed much to this issue through its intensive methods of observation. The nature of the primary care-giver, including the relative importance of biological versus other parents, and the single-mindedness with which childcare is provided (the common practice being to combine it with other forms of housework, and sometimes also with other forms of often hazardous income-generating work), are both dictated by cultural and socio-economic circumstances which anthropological demography is very well suited to explore.

Besides an investment of time and of intangible resources such as maternal autonomy and confidence, child survival needs an investment of material resources. This component of child neglect—that imposed by poverty, whether of households or communities—has received insufficient attention in anthropological demography. Given what we know about the biological influences on death—malnutrition, overcrowding, clean water, preventive and curative health care—it is only to be expected that strained material circumstances lead to a core of underinvestment which factors such as female autonomy and the best maternal will in the world cannot penetrate. While historical and political anthropology have much to say on the determinants of poverty and inequality, these sub-disciplines have in turn informed anthropological demography much less than has cultural anthropology. This is a great pity and a lack that future anthropological anthropology must speedily try to redress.

Such a narrowness of focus is unfortunate for more than one reason. First, the focus can be misplaced. There is sufficient evidence from history and from the contemporary world that household economic resources and direct state spending on health-related measures have an impact on infant and child mortality. One must not lose sight of the finding that, just as maternal education affects child mortality even when household income is controlled, at both the macro and micro levels, the rich experience higher child survival than the poor even when maternal education is controlled. This can happen for a variety of reasons: greater space (and therefore decreased exposure to and intensity of infections); more food (and therefore greater host resistance to infection); and more money (and therefore greater access to health care and to safe life-styles, ignoring for the moment the contribution of the diseases of affluence to child mortality).

Similarly, the community or state provision of safe drinking water, hygienic waste disposal, and easily accessible preventive and curative health services all add up to a situation in which children's chances of survival are greatly enhanced (see e.g. Sandiford *et al.* 1991; Kundstater *et al.* 1992), even in homes in which gender inequities are rife and

educational levels are low. Indeed, there is some evidence (see Cleland and Kaufmann 1993) that about one-third to one-half of the relationship between maternal education and child mortality can be explained by the higher incomes associated with educated mothers.

Thus, whatever UNICEF-type immunization and oral rehydration therapy (ORT) strategies may do in the short run, to quote Schepers-Hughes (1992), 'there is no immunization against malnutrition and against diarrhoea'. But the academic imagination, fired by anthropological demography, has ceased to be stirred by these political and economic issues, and it is not surprising that in a recent Popline search on diarrhoea Desai (1994) found that 38 per cent mentioned oral rehydration therapy and 22 per cent mentioned education, but only 5 per cent mentioned water supply, 8 per cent sanitation, and 2 per cent income. That is, the research and policy emphasis is directed almost exclusively at helping families (and especially mothers) rise above their material circumstances rather than at challenging these circumstances by demanding radical political and economic change. With more economic resources at their command and a better public infrastructure, families would need fewer skills to treat diarrhoea at home or to recognize the symptoms of measles, because their children would be less likely to get these ailments in the first place. The problem is not that poor mothers are less vigilant than better-off mothers: it is more that the slightest lack of vigilance on their part carries a much heavier cost.

If intra-household inequalities and power imbalances are worth removing in the interests of individual rights as well as of social goals such as child survival, surely inter-household and interregional inequalities demand mitigation on the same grounds. And cultural constraints imposed by larger factors such as religious, kinship, and marriage norms should surely not cloud the acknowledgement of the constraints imposed by scarce material resources; if anything, the former should be more amenable to manipulation and change than the latter.

It is also important to bring political and economic change back into policy-oriented research because, contrary to superficial expectations, the emphasis on mothers and families places an unfair burden of responsibility on mothers and families. Parents in most developing-country situations have enough to keep them occupied without being asked to take on the additional costs of government and market failure. The amount of time and effort needed for the already harassed mother to recognize diarrhoea in her child and to administer repeated doses of ORT may in the aggregate be equal to or even greater than the investment needed to provide the water and food to *prevent* frequent diarrhoea in the first place.

Indeed, it is rather curious that, although the underinvestment approach of the kind outlined earlier confronts one with cultural as well as non-cultural influences on child survival, the implications teased out of

individual pieces of research in anthropological demography continue to harp on the woman and the household as individual actors, buttressed primarily by their cultural circumstances (see also Ewbank 1994). And since culture implies something slow to change, the policy lesson is invariably drawn at the level of the individual or the family. This mind-set is also curious given the strong suggestion from anthropological–demographic research that interventions or developments at the individual or household level can have very different impacts on outcomes in families that are differently placed on the socio-economic (and not just cultural) ladder. For example, while female education may reduce sex differentials in mortality in South India and increase them in North India, these are cultural differences (Basu 1992) even within North India, and even within a culturally homogeneous community within North India there may be great variations: for instance, landed households exhibited a fall in sex differentials, and landless households a rise, with maternal education in Clark and Shreeniwas's (1994) Gujarat study.

In addition to underinvestment in the proximate determinants of childhood mortality, inadvertent underinvestment should be included in a consideration of factors that increase the likelihood of child mortality through behaviours that do not have an ostensible relation to mortality. Aaby's (1988) conclusions about the greater intensity of infection among secondary cases of an infection is an excellent example. When girls are not sent to school in Bangladesh, it is likely to be because schooling has other costs attached to it rather than as a stratagem to give them higher case-fatality rates from measles than their brothers, who get off more lightly because they are what Aaby calls index cases. If Aaby's thesis of overinfection is valid, it adds inadvertence as a risk factor to the poor health care that very young children in high-mortality societies receive. Their confinement to the home and their tendency to be secondary cases cannot be attributed entirely to conscious attempts to jeopardize their survival, however unwanted they are.

Finally, this is probably the place to address the issue of childhood mortality born of unpredictability or chance. This aspect of child mortality is best illustrated by the fact that even low-mortality societies have not achieved zero child mortality. By definition, it is true that such positive child mortality in these societies is actually a function of still imperfect information and still imperfect circumstances. In retrospect, any child death can be demonstrated to have been predictable and therefore, in principle, preventable. But *ex ante*, there continue to be several events that can be attributed only to chance by any method of blame allocation.

This category of random child deaths is important because of the tendency in anthropology and anthropological demography to seek and to describe a whole or a *consistent* picture of life. This is in line with the (later discussed) tendency to find a larger design in everything.

Childhood deaths from accidents are a good illustration of the hypothesis that not all outcomes have underlying motives or that motives cannot take all possible consequences into account. South Asia is a particularly good example in this respect. In spite of the high and constantly noted son-preference in much of this region, boys exhibit significantly higher mortality from accidents than do girls (see e.g. Wyon and Gordon 1971; Chen *et al.* 1981; Basu 1992). Only by stretching one's imagination can one attribute this increased risk to ignorance among mothers that the kite-flying child risks falling off the terrace or that playing in the local pond carries with it the risk of drowning. These risks are real, and when confronted with the issue most mothers will acknowledge them. But such acknowledgements cannot dominate the calculation in childrearing practices that require boys to develop the freedom and skills to prepare them for later life.

If there is a policy lesson in this, it is not necessarily one that makes households more wary about the the life-styles they promote in their children; it may instead be one that makes non-household-based safety measures more urgent and effective. On the other hand, when little girls in South Asia are maimed or die in similar life-style-related accidents—by burning at the kitchen fire, for instance—perhaps the policy issues are more complex. Not only does the poor rural home need better cooking arrangements, it also needs investments in material welfare which make it less necessary for little girls to be involved in this kind of dangerous housework. And this time, the socializing role of housework needs to be acknowledged more critically than the socializing role of physical freedom in little boys.

Underinvestment through deliberate neglect

This is the most politically volatile and ethically difficult kind of underinvestment in child survival. It is also the underinvestment that causes the greatest emotional and academic confusion in the culturally sensitive researcher, torn between assumptions about the universal nature of mother love and evidence that perhaps s/he should now begin to recognize that love means different things to different people.

But what does deliberate neglect reflect? While the subject of deliberate neglect is now out of the research closet with a vengeance, one gets the impression that its subtleties are not being as intensely explored. But these are important for both policy and academic purposes: the former because interventions may otherwise be hopelessly misplaced, and the latter because it can contribute to the contemporary charged debate on the universality of human emotions and goals and on the seemingly emotionless behaviour of many disadvantaged peoples. From a reading of the anthropological and anthropological demographic literature on

the subject, one may classify two clear strategies behind such deliberate neglect, although it is true that the distinction may often get blurred.

Neglect as a defence mechanism. In this case, neglect is an *outcome* of the experience or expectation of child mortality rather than a cause of it, except inadvertently or unintentionally. One withholds care, and one even withholds love, for fear that this love and care will be betrayed. In the uncertainties that plagued life, and especially early life, in much of history and continue to plague life in much of the contemporary developing world, it is safest not to tempt fate by getting too attached to young children, who often turn out to be very temporary visitors to one's home. This theme of detachment born of fear has been recorded in many micro studies of childhood and of childcare. The detachment may be real or it may be feigned, and it usually lasts until the child has survived long enough to hold a reasonably good chance of continued survival.

This kind of material and emotional underinvestment in young children takes many forms. In South Asia, for example, we have the common phenomenon of infants getting the least, most delayed, and the most ineffective kind of health care even when there is obvious illness (see e.g. Caldwell *et al.* 1988; Basu 1990; Pieris 1994). These age differences in resort to good health care appear strange given that infancy is probably the biologically most vulnerable stage of life. But they look much less strange when one understands the underlying rationale. Caldwell *et al.* (1988: 144) are worth quoting in this regard: 'Both a casualness about the conditions of birth and a lack of intensive care during infancy denote, in fact, a high degree of concern. Any obvious trouble about the child or any precaution about sickness would invite the jealousy of demons and might well result in the death of the child.'

The fear of tempting fate by getting too close to a child is indeed a recurring motif in the literary output of South Asia, as is the fear (and consolation) in many parts of the world that those whom the gods love die young. In the Indian subcontinent, a feigned uninterest is one way of not tempting fate; making a child unattractive and uncared for is one way of not tempting the gods to find a child attractive enough to want for themselves. So a newborn is dressed only in old hand-me-downs and the infant and toddler have their faces smeared with black marks to disfigure them. Praise of their looks or other characteristics is actively discouraged.

Deliberate neglect as a defensive mechanism is also embodied in practices such as not really considering a baby human until some time after birth. The outdoor ceremony in parts of Africa (Ware 1984), the delayed naming ceremonies in many parts of the world (see e.g. Scheper-Hughes 1992), and the giving of the same name to several children (Imhof 1985) are all devices to reduce the pain of possible loss by denying an

independent human existence in the first place or by reducing the amount of shared and personalized history that an infant can leave behind. Most such behaviours are of course institutionalized rather than conscious, but whether normative or intentional, they do end up serving the same purpose of making the uncertainties of survival easier to handle. Similar defence mechanisms may be inferred from norms and practices that equate dead children with innocent angels, and even celebrate child death as events that signify virtue rather than misfortune in many anthropological reports from Latin America (see Lewis 1963; Whitehead 1968; Scrimshaw 1978; Scheper-Hughes 1992).⁶

Not surprisingly, many of these measures also end up being self-fulfilling. That is, the deliberate neglect because the child may die in turn contributes to the high child mortality in these parts of the world. So, in all probability, do attitudes resulting in frequent and hurried pregnancies to insure against expected child loss. All this real-life experience is then naturally the statistician's nightmare, because it is difficult to disentangle determinants from consequences and consequences from proximate determinants, as already mentioned.

What policy lessons does this kind of anthropological research teach us? Once more, it underscores for us which interventions will not work, or at least which interventions will not work in isolation. Health care services, for instance, even when made greatly more accessible, may be underutilized for sick infants unless they are complemented with an information campaign.

At the same time, in other cases all that may be needed is a greater state or community investment in the health of biologically or seemingly high-risk children, so that the fear of their death spurs on familial efforts to save them rather than disinvest in them.

Neglect as an offensive strategy. Historical anthropology and the anthropology of small exotic communities are both rife with examples of deliberate child neglect which can only be classed as motivated by the desire to get rid of a child. Infanticide represents one extreme of such neglect. More indirect variants of infanticide may include abandoning children, fostering them out, selling them as slaves or prostitutes, delegating their care to wet-nurses, and, most commonly of all, strategically allocating resources such as food, health care, and time.

Neglect as an offensive strategy may often be inferred from its selective nature. It is less likely to be applied to all children across the board and more likely to be imposed upon children with particular characteristics. Indeed, this selectivity may be the acid test of its existence.⁷ Underinvestment mechanisms that apply to all children are probably more appropriately attributed to the other forms of underinvestment discussed so far, though some researchers (such as Scrimshaw 1978) have, somewhat

tautologically, viewed these as institutionalized ways of controlling population numbers.⁸

These unwanted characteristics include sex, birth order, the length of the preceding or succeeding birth interval, birthweight, appearance, chronic illness, the presence of deformities, and the single or multiple nature of the birth. These characteristics of socially high-risk births (some of these characteristics are of course biologically more vulnerable as well) have been statistically and qualitatively discussed in the literature and do not need a detailed review here. The important point is that such neglect implies that a particular pregnancy or birth is unwanted and therefore the infant is neglected or maltreated. The belief that such neglect is deliberate and motivated by intent to kill is strengthened a little in situations where cultural norms also devalue certain children, and is strengthened rather more in situations where current economic or political circumstances devalue some children. The evidence from nineteenth-century America (see Hammel *et al.* 1983) that regional and urban–rural differences in childhood sex ratios could be linked to regional and urban–rural sex differences in the economic opportunities for children is a good example of such consistency between economic circumstances and demographic outcomes.

But before classifying deliberate neglect as an offensive measure, several confounding factors need to be mentioned, some of which have already come up in this paper. Much of the problem arises from what may be called the difficulty of inferring motives from outcomes (Basu 1994). For example, is what appears as a deliberate strategy of offence actually a result of inadvertent neglect as previously described? May it also be a defensive mechanism even if it is selective? For instance, the low-birthweight, listless infant in the Brazilian slum (Scheper-Hughes 1992) may be selectively neglected not because it is unwanted, but because it is not expected to live. The emotional stoicism displayed at the death of such an infant may well reflect norms about mourning behaviour in high-mortality societies rather than an absence of grief (Nations and Rebhun 1988).

Similarly, in its zeal to infer conscious motives, research in anthropological demography may go overboard. The suggestion in Scrimshaw (1978) that practices such as the withdrawal of food from ill children or improper treatment of the umbilical cord reflect institutionalized means of controlling population seems an example of this kind. It makes the mistake of rationalizing all behaviours when there is enough counter-evidence that ignorance or misinformation is an important part of everyday life in all communities, however developed.

Alternatively, deliberate selective neglect may reflect only the impact of scarce resources when there is a conscious strategy of deliberate selective *overinvestment* in some children. For instance, a daughter may be

undernourished not so much because she herself is unwanted as because she is sacrificed to spare investment in a much wanted son. These are not simply semantic issues. The daughter who is unwanted because she will be an additional drain on family resources when the time comes for her to marry is in a less negotiable situation than one who is neglected more because her family cannot find the immediate means to ensure her survival given that her brother must survive at all costs. Any policy implements must deal differently with such different motivations for deliberate neglect. Anthropological demography is only beginning to come to grips with such subtleties; the more usual tendency has been to either deny such conscious strategy, or to emphasize such strategy without distinguishing between different motives.

Strategic underinvestment is also ill-suited to explain high child mortality in societies that openly value high fertility. For example, in eastern Nigeria there are communities that award women on the birth of their tenth child (Pearce and Falola 1994), and it would be difficult to apply the theoretical option of deliberate neglect as an offensive strategy here except to look at deaths among a select few children with characteristics that are feared rather than unwanted.

However, there is no denying that, even after making all these concessions to familial altruism and taking possible confounding variables into account, there *are* some children who are better off dead as far as their families' own wishes are concerned. (Of course, they are even better off never having been born in the first place; that is, mortality is a *response* to fertility rather than an outcome of it.) Culturally denying or delaying the recognition of personhood in children with unwanted characteristics (such as girls in many societies) also makes it emotionally and ethically easier to underinvest in them (see e.g. Harris 1977), just as it makes it easier to bear their unwanted loss, as mentioned above. Such denial of personhood is the analogue of the denial of personhood to foetuses in societies in which abortion of unwanted pregnancies is feasible; and, as Skinner (1994) has pointed out, one may view the entire spectrum of behaviour, beginning with pregnancy prevention through contraception and going through abortion to infanticide and intentional neglect of unwanted children, as a strategy of birth planning.

Thus, such death wishes remain real even if they are derived from complex compulsions, historical or immediate, rather than variations in human nature. The whole debate in anthropology on whether human nature or human emotions are universal or culturally constructed (see e.g. Lutz 1988; Scheper-Hughes 1992) is of much more than academic relevance to anthropological demography, and it is a pity that demographers have been hesitant to examine these issues.

However, even if it ignores the underlying emotions, anthropological demography has much to contribute to the understanding of such deliberate neglect as a strategy to control the size and composition of the

family, because it places such strategy in the larger cultural and social context of the family. In particular, much has been written about the cultural factors that lead to a greater devaluation of daughters in South Asia and their consequent neglect. Kinship patterns, marriage systems, inheritance forms, the status of women, and religious compulsions have all been evoked to explain the strong son preference of this region, a preference that leads to a desire for (often several) sons as well as an equally strong desire to limit the number of daughters. Such cultural compulsions are difficult to dislodge with short-term interventions, and their recognition therefore has an important policy role to play.

On the other hand, while such cultural determinants have in turn been related to a historical economic context by anthropological demography, economic and political factors tend to get less attention as *current* influences on fertility preferences (and therefore mortality intentions as well) in their own right. Cultural norms are not inflexible, and even if they are relatively inflexible there is much to be learnt about the changing interface between norms and actual behaviour (Lockwood 1995), an interface that is surely affected by a changing political and economic climate. This criticism of contemporary anthropological demography has been already mentioned in an earlier section.

How does the policy instrument deal with the notion of deliberate underinvestment in unwanted births? Direct supports to improve investment in child health and survival obviously cannot get very far with this class of child mortality. Other options have to be explored. If unwanted neglected births are simply a function of high fertility, an effective family planning programme has as much to offer as good health services. However, once contraception spreads and *numbers* of children can be controlled, other kinds of characteristics come to represent a higher proportion of unwanted births. Two kinds of policies are feasible now, depending on the moral, legal, and ethical position on these matters. Policy can either provide the informational and social support needed to reduce the unwantedness of certain characteristics (a long-term strategy), or it can provide the means to prevent the occurrence of unwanted births. The example of amniocentesis and selective abortion facilities is naturally the one that springs first to mind in this regard, and, as other kinds of biomedical technology also advance, anthropological demographic theory will have to confront these questions more seriously than it has done so far.

CONCLUSIONS

This paper has tried to revise the framework of the determinants of infant and child mortality by bringing together some of the dominant strands of research on this subject in anthropological demography. It suggests that an approach based on underinvestment as the major determinant of childhood mortality has much to offer. But the notion

of underinvestment used here is much broader than that implied by the standard demographic literature on strategic neglect and includes inadvertent as well as conscious underinvestment in young children. Contrary to the emerging tradition in anthropology and in anthropological demography, more space is devoted to such inadvertent underinvestment. The paper also adds the possibility of behavioural underinvestment to the analysis of the biological determinants of infant and child mortality, to make a much less neat but perhaps much more real representation of what kills children.

The notion of underinvestment allows one to be more selective in recommending policies to reduce child mortality. The findings from anthropological demography suggest that some policies are likely to be more effective than others. For example, education about better health practices can have only a limited impact unless it also addresses the various cultural and social constraints on adopting these better health practices.

Similarly, when certain categories of birth are unwanted enough for the babies to be deliberately neglected, there is little that the provision of better health services can do. What one needs is probably the kind of information and structural change that increases the wantedness of births that have already occurred as well as the services to prevent the occurrence of potentially unwanted births. But of course, except when births are unwanted simply because of their parity,⁹ this policy prescription raises a host of ethical questions with which demography is still inexperienced in grappling.

Indeed, anthropological-demographic research on child mortality is special as much because it raises these difficult ethical dilemmas as because it gives us a handle to deal with them. Too many outcomes that are taken for granted as advantageous in conventional demography force a rethinking of values when one enters the intense field-oriented method of the anthropologist. If the social engineering motive of demography can give as much importance to the desirability of outcomes as it currently does to the means of achieving these outcomes, anthropological demography, in spite of its other limitations, will have done much to hasten a mortality transition that takes into account the interests of all the parties involved.

NOTES

1. The analogy with the proximate determinants of fertility is not quite apt. While there is no ambiguity in the nature of the equation between fertility and each of its proximate determinants (e.g. a higher frequency of sexual intercourse increases the chances of conception, other things being unchanged), in

the case of child mortality it is very difficult to define a universal (i.e. context-free) relationship between such mortality and its proximate determinants.

2. This is partly because parts (a) and (b) are tangentially brought into the elaboration of part (c).
3. In other places such illnesses may be viewed as evidence of jealousy (e.g. the jealousy of polygynous wives among the Esan in mid-west Nigeria: see Omorodion 1993), and therefore again may be seen as requiring non-medical forms of treatment.
4. Although, as discussed later, it is not clear how much this particular impact of cultural conditioning affects poor child survival.
5. There is also some interest now in the role of selection in these factors, in that women who are educated also seem to have other characteristics which generally predispose them to relative success in life (see e.g. Kaufmann 1991).
6. But, as discussed later, one may even infer deliberate neglect as an offensive strategy from such behaviours. The value of anthropological demography is nowhere as underlined as in its unique ability (however unexploited so far) to probe such issues of motives.
7. But, as mentioned at the beginning of this paper, such selectivity can also have inadvertent roots as well as being immediately caused by factors outside the home. For example, if the state is not sensitive enough (or does not have the means) to provide health care services staffed by female workers, young girls in some cultures may suffer in the area of health care and their poor health outcomes may be wrongly attributed to deliberate underinvestment in daughters by parents. Similarly, deliberate neglect as a defensive mechanism may also be selective when it is targeted at children (e.g. the low-birthweight ones) who are not expected to survive.
8. This reasoning raises a kind of chicken-and-egg problem because we have one school of thought attributing institutions and norms that encourage high fertility to rational mechanisms for withstanding high fertility, and another school emphasizing norms and institutions that encourage high mortality as one way of withstanding high fertility. Obviously, both kinds of institutional response cannot have arisen at the same time.
9. Assuming of course that the agreement on preventing 'excess' births is as total outside demographic research as it is within it.

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Health Treatment Behaviour in Sri Lanka

INDRANI PIERIS

The concept of health transition was originated as an attempt to fill the apparent gap left by the demographic transition and the epidemiological transition in explaining the processes and causes of mortality decline. Both these approaches consider mortality as the ultimate measure of health status of a population, but both fail to consider what happens to those who recover from their illnesses. Health transition extends its scope to include morbidity and disability as well as mortality as key health outcomes; it also covers social and behavioural health problems in populations and demands upon and responses of health policy and the health care system (Bell and Chen 1994). Health transition research, particularly the research on health behaviour, has contributed to our understanding of how some societies which spend a minimum of resources on health succeed in achieving a good health status. It has also helped us understand such problem areas as the availability of health services and the people's perception and use of such services. This in turn can help health planners and policy-makers to target their efforts on the areas that are in need of special attention.

This paper presents evidence from Sri Lanka to show how individual health behaviour can contribute to the achievement and maintenance of good health status. Sri Lankans' achievements in health are impressive, given Sri Lanka's low per capita income (US\$540 in 1992, less than one-fortieth of the average for industrialized countries and among the poorest quarter of the world's countries). More remarkably, this has been achieved without an unusually high expenditure on health. Sri Lanka's government expenditure on health at 3.5 per cent of GDP is similar to Australia's but in per capita terms is only one-thirtieth. Yet according to the World Bank's 1995 *World Development Report* (World Bank 1995), Sri Lanka has the longest life expectancy at 72 years of any of the less developed countries, and longer even than many middle-income countries. It is little short of industrialized countries' life expectancies, for example

This paper draws on research materials analysed at greater length in the author's Ph.D. thesis, 'Disease, Treatment and Health Behaviour in Sri Lanka', submitted to the Demography Program of the Australian National University, Canberra, in 1994.

76 years for the United States. Similarly, Sri Lanka's 1993 infant mortality rate (IMR) of 24 per 1,000 live births was far below the level typical of a less developed country. This is a dramatic change from the situation at the beginning of this century, when mortality levels in Sri Lanka were little better than those of its South Asian neighbours. This paper, using Sri Lankan Demographic Change Project data, examines how health care behaviour has contributed to Sri Lanka's good health status.

THE RESEARCH PROJECT

The major data source is the Sri Lankan Demographic Change Project (SLDCP).¹ The SLDCP was conducted in two parts. The first part in 1985 covered seven localities in Sri Lanka's Western Province, including two rural areas, two urban middle-class areas, two Muslim-dominated slums, and a squatter slum.

The Western Province is Sri Lanka's commercial heartland and includes the capital city, Colombo, and extensive commuting areas as well as prosperous rural areas producing rice and cash crops, mainly rubber, coconut, and cinnamon. The population of Western Province is predominantly Sinhalese, but there are also sizeable minorities of Muslim Moors and Tamils. The religious and language composition of the population in the province is similarly mixed: the Sinhalese are predominantly Buddhist, with a significant Catholic minority, the Tamils are mainly Hindu with a minority of Catholics, and the Moors are Muslim. The Sinhalese speak Sinhala while the Tamils and Moors speak Tamil.

One of the two villages is located to the south of Colombo in a mixed rice, rubber, and cinnamon-growing area. The other village is situated north-east of Colombo, in the Gampaha district; the chief occupation of its inhabitants involves the production of coconuts and related products. Both villages have a predominantly Sinhalese population.

The urban poor areas consisted of two slum areas of central Colombo and a squatter settlement, just north of Colombo. The two slum areas are close together, but one area is poorer and more run down, being predominantly shanty housing, and had been subject to recent flooding. All three areas have easy access to all facilities including schools, hospitals, and shops. The two slum areas have a large population of Moors, while in the squatter settlement the majority are Sinhalese with sizeable proportions of Tamils and Moors. Most adult men in the urban poor areas are employed in trade: Moors in particular are traditionally traders.

The middle-class areas were chosen from the commuting areas of Colombo. Although the term 'urban middle-class' is used to describe these areas, they are not inhabited exclusively by middle-class people, as many poorer households live there side-by-side with richer households.

The middle-class areas have a high proportion of people working in the professions, in clerical administrative jobs, and in business. One area is mainly Sinhalese Buddhists with a sizeable community of Burgher Christians (with Dutch and Portuguese ancestors as well as Sri Lankans), and the other is also mainly Sinhalese but with equal proportions of Buddhists and Christians.

The second part of the SLDCP survey was in a tea estate in Nuwara Eliya District, Central Province, where the majority of the population were Indian Tamil. Most of the Indian Tamils worked on the tea plantation, the women as full-time tea pickers and the men as part-time labourers. Many of the Sinhalese in the area were the managerial staff of the plantation and shopkeepers. The tea estate population is of interest for demographers because of its very early fertility decline (Langford 1981, 1982). However, the infant and child mortality levels remain comparatively high: all districts with sizeable plantation populations have on average higher mortality levels than is the case in any other district or in the country as a whole. This makes it an interesting area in which to study health-related behaviour.

FINDINGS

Health Treatment Behaviour in Sri Lanka

We asked the respondents about the illnesses they and their family members had suffered from in the recent past and the illnesses they were suffering from at the time of survey. We also asked them about the treatments they had sought so far and their reasons for trying different types of treatment.

The most common illnesses from which people were suffering at the time of survey were common cold, fever, rheumatism, asthma, skin diseases, and diarrhoea. The types of medicine used to combat such illnesses are listed in Table 15.1.

Modern medicine is the most common form of treatment in all areas. Self-treatment, comprising modern and traditional home medicine, is also widely used, particularly by the urban middle-class and rural people. Modern medicine is easily available in Sri Lanka, especially at hospitals where medicine is provided free of charge. Accessibility to modern facilities is easy. This is particularly so in densely settled Western Province. In Sri Lanka the travelling distance, on average, is less than 1.3 kilometres from home to a health facility of any type, and less than 5 kilometres to a free government modern health facility (Simeonov 1975: 91-9). In the SLDCP urban research areas the average distance to a modern facility, either free or paid, was less than the national figure, while the average

TABLE 15.1 Distribution of Type of Health Services Used for the Treatment of Sick Persons in Sri Lanka at the Time of Interview in Survey Areas, 1985/1987

Type of treatment	Urban middle class		Urban poor		Rural		Estate		Total %
	N	%	N	%	N	%	N	%	
<i>Modern</i>									
Hospital (free)	69	27.7	105	35.8	58	34.5	36	34.3	32.9
Private (paid)	93	37.3	88	30.0	46	27.4	14	13.3	29.6
<i>Traditional</i>									
Ayurveda	37	14.9	27	9.2	31	18.5	8	7.6	12.6
Magico-religious	5	2.0	13	4.4	2	1.2	9	8.6	3.6
Self-treatment	40	16.1	51	17.4	27	16.1	38	36.2	19.1
Combinations	5	2.0	3	1.0	1	0.6	—	—	1.1
No treatment	—	—	7	2.4	3	1.8	—	—	1.2
<i>Total no. of visits</i>	249	100.0	293	100.0	168	100.0	105	100.0	100.0

Source: Primary analysis of Sri Lankan Demographic Change Project Data, 1985 and 1987.

distance to a modern health facility in rural and estate areas was just above the national average. Because of the large number of private doctors practising in the country, the average distance to a modern facility in the research areas is much less than to an Ayurvedic facility, which ranged from 6 to 10 kilometres.

In the tea estate, in contrast, the proportion of the people who used modern health facilities was much lower, particularly in the case of those who went to fee-charging clinics. Estate people had access to a free health dispensary on the estate, but the nearest government hospital was about 20 kilometres away. There was no private practitioner nearby. A complaint often made by estate respondents about the estate clinic was that there was no medicine at the clinic, and if they required better care in the form of modern medicine they had to go to the estate doctor's home next door and pay 20 rupees or more for a visit.

An important explanation for the apparently greater use of modern medicine by the respondents in the Western Province is education. The rising educational level, particularly that of females, in the lowland rural and urban middle-class areas may have encouraged the use of modern health services by challenging traditional behaviour. Educated women worldwide tend to be more independent in decision-making; they are less restricted to their households or villages and are able to go beyond their homes to seek better health treatment, either to modern services or to the better-trained traditional practitioners (see J. C. Caldwell 1979). Okafor (1983: 593), for example, has shown that in Nigeria the more

TABLE 15.2 Type of First Treatment Given to Those Sick at the Time of Survey with Specific Diseases, All Ages, Male and Female, 1985/1987

Illness group	Hospital/ private doctor	Ayurveda doctor	Magico- religious	Self-treatment	Other ^a	None	Total	
							N	%
Fever	39.7	0.0	1.6	54.0	0.0	4.8	63	100
Colds, coughs, catarrh	39.8	3.1	0.0	54.1	1.0	1.0	97	100
Other respiratory diseases	76.2	13.1	0.0	8.3	1.2	1.2	84	100
Infective and parasitic diseases	25.0	0.0	12.5	50.0	0.0	12.5	8	100
Intestinal infections	77.8	7.4	0.0	14.8	0.0	0.0	27	100
Chronic rheumatism	53.8	25.0	3.8	15.4	0.0	1.9	52	100
Other chronic conditions	83.3	8.3	0.0	0.0	2.8	5.6	36	100
Skin diseases	63.2	15.8	0.0	18.5	2.6	0.0	38	100
Mental and psychological diseases	100.0	0.0	0.0	0.0	0.0	0.0	7	100
Accident and injury	82.1	7.1	0.0	7.1	3.6	0.0	28	100
Female ill-health	100.0	0.0	0.0	0.0	0.0	0.0	3	100
Diseases of circulatory system	78.6	7.1	0.0	14.3	0.0	0.0	28	100
Nutritional deficiencies	87.5	0.0	0.0	6.3	0.0	6.3	16	100
Urinary and bladder complaints	77.8	22.2	0.0	0.0	0.0	0.0	9	100
Headaches	43.8	6.3	0.0	50.0	0.0	0.0	16	100
Other illnesses ^b	100.0	0.0	0.0	0.0	0.0	0.0	3	100
N	329	46	5	132	4	10	526	100

^a Other includes combination of modern and traditional treatments.

^b Other illnesses include toothache and other minor ailments. Those who did not specify treatment were excluded.

Source: Primary Analyses of the Sri Lankan Demographic Change Project data, 1985 and 1987.

educated visit hospital more frequently for treatment because they are more conscious of sickness and react more quickly in seeking treatment.

In our survey, the major difference was not whether patients used Western medicine, but what type of Western medicine they used—private doctors or hospital facilities. In urban middle-class areas, where people were better educated, they were more likely to go to private practitioners of Western or modern medicine. This may be in part because they were more able to afford private medical care. In contrast, the urban poor showed a slight preference for using hospital facilities, which are free and which are located close to two of the poor areas: they had to travel on average less than 1 kilometre. Even so, many poor respondents went to private doctors because then they could choose the sort of doctor they wanted, an especially important point for Muslim women who prefer the service of a female doctor. The use of private doctors was only slightly less than hospital use among rural people. Private doctors were generally more available, often practising near the village, whereas seeking hospital treatment may have meant taking two or three buses. On the other hand, economic constraints were a major factor in discouraging frequent recourse to private doctors.

Despite the easy availability and low cost of modern medicine and the neglect of traditional medicine by the government during the colonial period, there is still a substantial demand for traditional care in Sri Lanka. In the study areas, a substantial proportion of people had sought traditional cures. However, the areas differed considerably in terms of their preference for particular forms of traditional medicine.

In the survey areas people tend to use modern treatments for most illnesses although traditional treatments are preferred for some types of illness. Almost all illnesses reported, except colds, coughs, and catarrh, were predominantly treated by modern health care (see Table 15.2). However, people often took modern medicine as the first treatment and later sought other treatment options as well. This is illustrated in Figs. 15.1–15.6.

When different treatments are used, there is a tendency, as Obeyesekere (1976) noted, to use specific treatments for a particular purpose. Ayurvedic (traditional) medicine has had an important place in treating those illnesses that people believe to be due to humoral imbalance such as chronic rheumatism, believed to be caused by excess 'wind', and skin disease. Similarly, colds, coughs, and catarrh are regarded as being caused by the disequilibrium of 'phlegm' in the body, and people treat them with home-made Ayurvedic herbal preparations (see Table 15.2).

Sri Lankans believe that illnesses that are caused by humoral imbalance can be cured only by restoring the equilibrium of the humours. The Sinhalese in particular believe that rheumatism cannot be totally cured by modern medicine which treats only the symptoms, whereas Ayurvedic

medicine cures the underlying cause of the disease. Many people say that Western medicine 'heats', thus disturbing the balance of the humours and causing side effects such as skin rashes and dizziness. This is similar to the beliefs in many societies. Though not as lucidly stated, our respondents held similar sentiments to those expressed by one of Nichter's respondents in his Indian study:

'English' medicine and urea (a chemical fertilizer) are both powerful, heating, and harmful after some years of use . . . Certainly, they are popular—urea makes crops green overnight and increases yield until one day you find that the earth is hot, acidic, and useless. Injections are like that too. You take them and feel better quickly but later your body turns weak . . . yes the agricultural extension officer tells us to balance urea with potash and other chemicals and that this will prevent the soil from becoming hot. The doctor tells us to eat good food, drink milk, and take tonic and we will not have after effects from the injections he gives us. But this is not how we live . . . we don't drink milk or take tonic daily nor do we use fertilizer the way they tell us . . . this is not our habit—such things are costly and we have other needs. (Nichter 1980: 228)

Some respiratory diseases, however, including pneumonia and bronchitis, which are regarded as being caused by the disharmony of the humours, are treated mostly by modern medicine. This is presumably because of the seriousness of the symptoms and their need for fast-acting treatment which it was accepted that only modern medicine could provide. However, in Sri Lanka it is not a matter necessarily of using only one treatment rather than another. There is a logical inclination to use modern medicine at the onset of illness to cure the symptoms and then to use other forms of treatment to cure the underlying causes.

Magico-religious medicine which is provided by an exorcist, priest, or charmer is used mainly for diseases that are believed to be the result of supernatural influences. In the survey areas, magico-religious medicine is mostly used to treat ill-health conditions related to the female reproductive system, mental and psychological diseases, fever, infectious and parasitic diseases, and intestinal disorders. (These are illustrated in the diagrams below.) Such diseases can be due either to natural causes, in which case they are treated by either Western or traditional herbal medicine, or to supernatural causes, when they are treated by magico-religious medicine.

The survey found that, of those women who complained of a reproductive-related problem, 43 per cent of respondents had been treated by magico-religious medicine for the loss of a pregnancy or for menstrual disorders. Miscarriages are often seen as being due to the influence of Kalu Kumara ('the Black Prince'), a demon who fills women with sexual thoughts (Kapferer 1983: 122). Some women respondents said that pregnant women sometimes dream that a black man enters the bedroom and forces them to have intercourse; subsequently a miscarriage occurs.

Demographic and Socio-cultural Correlates of Health Care

Apart from the belief in the humoral theory of illness, what other factors determine the need for a plural health care system in Sri Lanka? We examined the effect of a number of demographic and socio-cultural factors in this regard. It appears from the analyses that there is little difference in the way the same illness has been treated for persons of different ages. There is slightly more use of modern medicine, either free or purchased, for young children aged up to 5 years in the treatment of fevers, colds and coughs, and worms. The youngest group was less likely to have been given home remedies for colds, coughs, and catarrh. Patients over 45 years of age are more likely to use private doctors for fevers and major respiratory illnesses. This may be because the youngest and the oldest groups are known to be high-risk groups needing quick attention. Self-treatment included both herbal preparations and modern analgesics such as Panadol and Disprin. Most self-treatment for fevers, colds/coughs/catarrh, and diarrhoea involved the use of herbal preparations. For fever 249 people used self-treatment, of whom 70.7 per cent ($N = 176$) used herbs only, 20.9 per cent ($N = 52$) used analgesics, and 8.4 per cent ($N = 21$) used herbs and analgesics combined. Of 332 people who treated themselves for colds, coughs, and catarrh, 78 per cent used herbs, 17.8 per cent analgesics, and 4.2 per cent both types. Of the 58 people whose first treatment for diarrhoea was self-treatment, 91.4 per cent had used herbs only while a mere 1.7 per cent had used analgesics alone. Interestingly, the data indicated that young children were less likely to be given analgesics than adults.

Ayurveda is used mostly by elderly people, partly because the illnesses for which it is held to be most suitable are illnesses of the elderly, for example rheumatism. An exception to this generalization is skin rashes, which occur mainly among younger children; for these disorders Ayurvedic medicine is felt to be particularly efficacious.

The age of the person is not a strong factor in determining the type of treatment used; rather, it is the type of illness and the perceived cause of that particular illness that decide the appropriate treatment.

Sex differentials in treatment exist in many South Asian societies, a fact primarily attributed to male preference. Miller (1981: 99–101) found in North India that families were more likely to take boys to a hospital. Murthy (1981: 78–80) and Chatterjee (1984: 21–6) also reported for India that males of all ages were more likely than girls to be taken for treatment. Rahaman *et al.* (1982: 1124) noted that in Bangladesh, while girls and boys suffering from diarrhoea were taken in equal proportions to a health centre if the centre was nearby, as the distance increased, the relative proportion of girls taken for treatment declined markedly. Langford and Storey (1993: 275–6) have reported that such differentials existed in

Sri Lanka in the past but now seem to have disappeared. They attribute this to the former prevalence of hookworm and malaria, diseases which they argue afflicted women to a greater degree than men, owing to the diseases' association with anaemia.

The SLDCP data do not suggest that respondents are more inclined to report illnesses of males than females. Indeed, marginally fewer males than females were reported as sick: 49 per cent of men and 51 per cent of women. Slightly more males than females under age 5 were reported as having been sick in the recent past: 52.8 per cent males as against 47.2 per cent females. Neither figure implies a sharp difference regarding attention given to illnesses of boys compared with girls.

While the numbers are small, male children under 5 seem to have been slightly more likely than females to receive modern treatments for the same illness, but the overall differences are not significant. While differentials in total treatment by sex seem minor, there are some significant differences in the treatment for specific illnesses by sex. Females are more likely than males to receive Ayurvedic treatment, possibly because, since most women live at home and work close by, they are able more easily to follow the various dietary regimes and other behavioural changes required when taking Ayurvedic treatment than men, who often work far from home. Self-treatment, except for chest pain and skin disease, is more often practised by men. This does not mean that men take their own home-made herbal preparations; the preparations are usually concocted by the women. Self-treatment is easy nowadays with mixed herb packets available in any retail store. Adult males also use a lot of analgesics before seeking treatment, as they are employed away from home and find it hard to go to free medical care.

The treatment of illnesses by respondents' place of residence in Table 15.3 indicates that health concepts vary slightly by place of residence. Self-treatment for minor respiratory diseases (colds, coughs, and catarrh) is common among the urban middle-class, rural and estate populations but not in the urban poor areas, where home-prepared herbal medicines were little used. One reason for this, as discussed earlier, is that urban poor areas have easy access to hospitals where medicine is available free of charge. Nevertheless, it is significant that when cross-tabulated by religion most of those who use self-treatment in urban poor areas are Buddhists, that is Sinhalese.

Although the poor residents made relatively little use of self-treatment, the survey found that most urban poor residents, particularly Muslims, kept Vicks² and balms in their houses. It was shown that the urban poor did use self-treatment for many illnesses, although overall recourse to it is less than in other areas. However, only 25 per cent of the respondents in the urban poor areas exclusively used herbs, 7 per cent used only analgesics, and a further 1 per cent used both herbs and analgesics. Among the

TABLE 15.3 Percentage Distribution Showing how Illnesses are Treated in Different Survey Areas^a

Illness group/area ^b	Hospital (free)	Western (paid)	Ayurveda	Self-treatment	Magico-religious	Both modern and traditional	Total	N
<i>Fevers</i>								
UMC	7.5	29.9	0.5	61.5	0.5	0.0	100.0	187
U.poor	31.2	31.2	1.0	34.2	1.5	1.0	100.0	199
Rural	21.8	27.6	1.1	49.4	0.0	0.0	100.0	87
Estate ^c	28.0	24.0	0.0	46.0	0.0	0.0	100.0	50
<i>Colds/coughs catarrh</i>								
UMC	9.2	15.8	3.1	71.9	0.0	0.0	100.0	196
U.poor ^d	30.0	14.5	3.6	48.2	0.9	0.9	100.0	110
Rural ^e	9.9	9.9	1.8	75.7	0.9	0.9	100.0	111
Estate ^e	13.4	3.0	1.5	79.1	0.0	1.5	100.0	67
<i>Diarrhoea</i>								
UMC	17.6	45.1	5.9	31.4	0.0	0.0	100.0	51
U.poor	30.9	32.7	1.8	34.5	0.0	0.0	100.0	51
Rural	18.8	25.9	3.7	51.9	0.0	0.0	100.0	27
Estate	36.4	18.2	4.5	40.9	0.0	0.0	100.0	22
<i>Wounds and accidental injuries</i>								
UMC	38.9	16.7	0.0	44.4	0.0	0.0	100.0	18
U.poor	50.0	25.0	0.0	25.0	0.0	0.0	100.0	12
Rural	50.0	14.3	28.6	7.1	0.0	0.0	100.0	14

TABLE 15.3 Cont'd

Illness group/area ^b	Hospital (free)	Western (paid)	Ayurveda	Self-treatment	Magico-religious	Both modern and traditional	Total	N
<i>Rheumatism and body pains</i>								
UMC	27.0	24.3	29.7	18.9	0.0	0.0	100.0	37
U.poor Rural	23.3	16.7	13.3	36.7	0.0	6.7	100.0	30
Estate	24.1	13.8	34.5	27.6	0.0	0.0	100.0	29
	31.3	6.3	18.8	43.8	0.0	0.0	100.0	16
<i>Worms</i>								
UMC	12.5	58.3	4.2	20.8	4.2	0.0	100.0	24
U.poor ^c Rural	44.0	36.0	0.0	20.0	0.0	0.0	100.0	25
	20.0	33.3	0.0	46.7	0.0	0.0	100.0	15
<i>Other respiratory illnesses</i>								
UMC	23.8	59.5	4.8	11.9	0.0	0.0	100.0	42
U.poor Rural	29.2	38.5	1.5	24.6	4.6	1.5	100.0	65
	9.1	63.6	0.0	27.3	0.0	0.0	100.0	11
<i>Skin rashes</i>								
UMC	29.2	45.8	4.2	20.8	0.0	0.0	100.0	24
U.poor	44.4	33.3	5.6	16.7	0.0	0.0	100.0	18

^a Only those illnesses reported by 10 or more people included in table. Since the question was not asked in Bondupitiya, 'rural' refers only to Lotuwagoda.

^b UMC = urban middle-class; U.poor = urban poor.

^c One person was not given any treatment.

^d Two persons were not given any treatment.

Source: Primary analysis of Sri Lankan Demographic Change Project Data, 1985 and 1987.

TABLE 15.4 Percentage Distribution of Types of Self-Treatment Used for the Last Sick Person as His/Her First Treatment, Grouped Survey Areas^a

Type of medicine	Urban middle-class	Urban poor	Rural areas	Estate
Herbs only	34.0 (222)	25.3 (150)	45.4 (157)	32.7 (68)
Modern analgesics	9.5 (62)	6.6 (39)	4.0 (14)	12.5 (26)
Both types	4.1 (27)	1.2 (7)	0.3 (1)	1.9 (4)
Total no. treated with all treatments ^b	652	593	346	208

^a Numbers are given in parentheses.

^b Since other treatment types are not included, column totals do not add up to 100%, and the numbers in parentheses do not add up to the total numbers treated.

Source: Primary analysis of Sri Lankan Demographic Change Project Data, 1985 and 1987.

urban poor residents, the majority using herbal self-treatment is Sinhalese and a smaller proportion is Tamil. Of the 150 urban poor respondents who used solely herbs, 42 per cent were Muslims, and of the 39 respondents whose self-treatment consisted solely of analgesics, 90 per cent were Muslims (see Table 15.4).

Over 50 per cent of the users of magico-religious treatment were from urban poor areas with the estate population being the second largest users. This is closely related to the religious composition of these areas: Muslims and Hindus often invoke vows to gods, a comparatively inexpensive form of magico-religious treatment. Urban poor residents used magico-religious treatments mainly to treat young children for fever and respiratory illnesses. Estate people use magico-religious treatment for infectious and parasitic diseases.

Ayurveda is more favoured by the urban middle-class and rural residents. There is a substantial use of Ayurvedic medicine for rheumatism in all areas. Rural residents use Ayurvedic medicine for wounds and accidental injuries such as fractures. However, the most common form of treatment in all areas was modern medicine.

The treatment of illnesses adopted by people is affected by the type of practitioner it is easiest for them to consult. For urban people the local private doctor is convenient, whereas for a villager it is often easier to go to the nearest priest or 'native doctor' for advice. This is partly because the hospitals have set hours, whereas the private clinics have flexible hours, which is more convenient for the patients. Ayurvedic medical practitioners do not have flexible hours and, as mentioned above, prescribe various behavioural regulations which can be inconvenient to perform regularly. Education and affordability are important

TABLE 15.5 Percentage Distribution of Treatment for Specific Illnesses by Education of the Respondent, All Survey Areas^a

Illness group	Education (in years)	Hospital (free)	Private (paid)	Ayurveda	Self- treatment	Magico- religious	N
Fevers	0-6	30.1	25.9	0.9	42.1	0.9	216
	7-9	5.3	33.3	0.0	61.3	0.0	75
	10+ ^b	9.3	28.9	0.0	59.8	1.0	97
Colds/coughs/ catarrh	0-6 ^{b,c}	16.0	11.5	3.0	66.5	0.5	200
	7-9	16.2	5.9	1.5	76.5	0.0	68
	10+	5.7	13.2	3.8	76.4	0.9	106
Diarrhoea	0-6	32.8	23.4	4.7	39.1	0.0	64
	7-9	26.7	40.0	6.7	26.7	0.0	15
	10+	4.2	54.2	4.2	37.5	0.0	24
Wounds and accidental injuries	0-6	54.5	22.7	9.1	13.6	0.0	22
	7-9	30.0	30.0	20.0	20.0	0.0	10
	10+	30.0	23.3	3.3	40.0	3.3	30
Worms	0-6 ^d	50.0	28.6	7.1	7.1	0.0	14
	7-9	27.3	54.5	0.0	18.2	0.0	11
	10+	25.0	44.2	3.8	23.1	3.8	52
Other respiratory illnesses	0-6	26.3	57.9	0.0	15.8	0.0	19
	7-9	8.3	83.3	0.0	8.3	0.0	12
	10+	33.3	37.5	4.2	20.8	4.2	24
Skin diseases	0-6	36.4	45.5	0.0	18.2	0.0	11
	7-9	90.0	10.0	0.0	0.0	0.0	10
Malnutrition	0-6						
	7-9						
Heart ailments	0-6						
	7-9						

^a Only those illnesses reported by 10 or more people are included in the table. In the case of children, education refers to the education of the mother. Row totals add up to 100%.

^b 1% in each group used a combination of modern and traditional treatment.

^c Two persons were not given any treatment.

^d One person was not given any treatment.

Source: Primary analysis of Sri Lankan Demographic Change Project data, 1985 and 1987.

influences too. Hospital treatment is provided free of charge, whereas other treatments such as Ayurveda and magico-religious treatment can be costly.

The analysis of treatment used by respondent's religion shows that Muslims are much less likely to use Ayurveda and self-treatment for illnesses. Muslims and Hindus were most likely to use magico-religious treatments: Buddhists 3.7 per cent, Hindus 5.6 per cent, Muslims 9.2 per cent, and Christians 3.5 per cent. The numbers are too small, however, to provide statistical certainty. Hindus believe that infectious diseases such as mumps, measles, smallpox, and chickenpox are caused by the goddess Mariamma. The Sinhalese Buddhists hold similar beliefs, but most Sinhalese in both rural and urban middle-class areas sought modern treatment for such illnesses.

Nevertheless, the data may reflect the strong influence of Islam and Hinduism on people's daily lives. It may also reflect differences in the nature of the magico-religious treatments. The magico-religious treatments used by Muslims, for instance, tend to be prayers to God, which are inexpensive and easily performed, in comparison to the very elaborate and expensive magico-religious treatments used by the Sinhalese, such as *thovil* ('devil' dancing).

Generally, educated people receive modern treatment, often from private Western doctors, while those with low education receive free hospital treatment. This is, as mentioned earlier, a matter of convenience and also shows a socio-economic difference in people's ability to afford health treatment. The more educated are likely to have jobs and do not have time to go to hospitals, but can go to the private clinics where opening times are flexible. The most educated were also from the middle-class areas and could afford the cost of private treatment.

The more educated used self-treatment for fevers and minor respiratory illnesses. This may be as much an indication of early detection and treatment as of a particular preference for this type of medicine. At the lowest and highest educational levels, diarrhoea was treated with home-made medicine, but at the middle level of education self-treatment was less used. For other respiratory illnesses the educated used private modern medicine while the less educated used self-treatment and modern hospital medicine.

A comparison of the treatment of illnesses by education is limited in Table 15.5 by small numbers, but, overall, education does not seem to greatly affect the way people treat illnesses. The main difference is that the educated tend to attend private fee-paid clinics rather than hospitals where medicine is available free of charge. The educated are probably more able to pay for medicine, but more importantly, it is easier to discuss the health problem and the treatment with a private doctor than with a doctor at a hospital.

There was a close relationship between the socio-cultural variables as the lowland people mainly belonged to the same ethnic and religious groups. As explained above, the urban poor were predominantly Muslims, with some Tamil Hindus and a small proportion of Sinhalese Buddhists; in the rural areas the people were Sinhalese Buddhists; in middle-class areas most people were Sinhalese Buddhists with a sizeable proportion of Christians, most of whom were Sinhalese; in the estate the population was predominantly Tamil Hindu.

The Moors and the estate Tamils, most of whom had little education and were poor, were the least likely to use private medical facilities. Because of a certain homogeneity in the survey areas, and on occasion insufficient numbers of the minority communities, comparisons by socio-cultural characteristics within each area are not always possible. Nevertheless, a comparison of the communities reveals interesting cultural differences in health care behaviour. Many Muslims believe that women should not be educated. Although the survey suggests that inadequate access to schools is a factor in the low levels of education in the estates, it is probably also true that there is less demand among the Indian Tamil community as a whole than among the Sinhalese or Sri Lankan Tamils. This may be partly because education does not promise them any prospect for advancement in the estate sector; to become a tea picker or an estate labourer does not require education. The lowland people perceive their children quite differently. Education is seen as a useful skill in itself even if it does not lead to a highly paid job, in that it is an entry into a new world which requires such skills as reading a telegram or a medical prescription³ or filling in application forms for jobs in the Middle East.

Similarly, Moors seem more likely to neglect their children's minor illnesses, thus allowing them to develop into something more serious. The slight use of self-treatment by herbs is an indication that Moors delay the treatment of such illnesses, when the others would treat them. The use of magico-religious treatment for faith healing appears also to be a practice of the Muslims and Hindus.

The Health-Seeking Process in Sri Lanka

The analysis so far indicates that, while the concepts of illness causation influence the treatment used by the respondents in the SLDCP Survey, modern medicine has been the dominant type used. Even illnesses that are attributed to humoral imbalance such as rheumatism and skin diseases were treated with modern medicine. This is affected by the fact that the analysis of treatments referred to first treatments used by the respondents.

Once someone is identified as sick, immediate action should be taken to reduce the danger. In many societies this is not done. In South India,

for example, even when a person has been identified as sick, treatment is often delayed because people do not want to interfere with the 'punishment of the gods' and thereby provoke them (J. C. Caldwell *et al.* 1983: 193). The SLDCP, however, found in Sri Lanka that 98 per cent of those who were sick at the time of the interview had been given some form of treatment. In the urban middle-class and in the estate areas 100 per cent of the sick had already received some form of treatment at the time of the survey, while 2.6 per cent of the rural sick and 4 per cent of the sick among the urban poor had not received any treatment. However, most cases not receiving treatment were older people with colds and chronic conditions such as rheumatism.

The survey findings emphasized the quick action and continuous evaluation of Sri Lankans in regard to illness. Of the 98 per cent of the currently sick who were receiving treatment at the time of the survey, 37 per cent had already changed to a second treatment and 15 per cent of this group had sought a third treatment. For the currently sick who had received treatment, 61 per cent had had modern medicine as the first treatment while 26 per cent had used self-treatment first. People were very much aware of whether treatment was working or not: this is usually decided not by a doctor, but by the patient or by parents in the case of children. When the treatment appeared not to be effective, there was no hesitation in trying another doctor or even a completely different type of treatment.

The health-seeking process can be explored further through the use of flow-charts. The analysis is restricted to those who have recovered from illness so that the entire course of treatment can be examined. This may, however, result in an understating of the treatment of chronic illnesses from which many people never fully recover, and which are likely to be treated with Ayurvedic and magico-religious cures.

Figs. 15.1 and 15.2 show the treatments given for the most commonly reported illnesses, fevers, and colds/coughs/catarrh. Fever is normally treated either by modern medicines or by self-treatment, usually herbs.

The cure rate for modern treatment is much higher and most subsequent treatment is modern. Colds are usually treated by self-treatment and if this is unsuccessful by modern treatment. The success of treatment is, of course related not simply to its efficacy, but also to the seriousness of the illness. Early self-treatment probably reveals more concern or awareness of illness than any aversion to modern medicine. On average, home treatments continue for three days before treatment is sought from a formal health service. Modern medicine is used for about seven days before change to another treatment. If the treatment is not 'successful', other treatments will then be sought.

The previous sections of this chapter showed that the single most frequently used treatment for most illnesses is modern medicine. This,

N=524

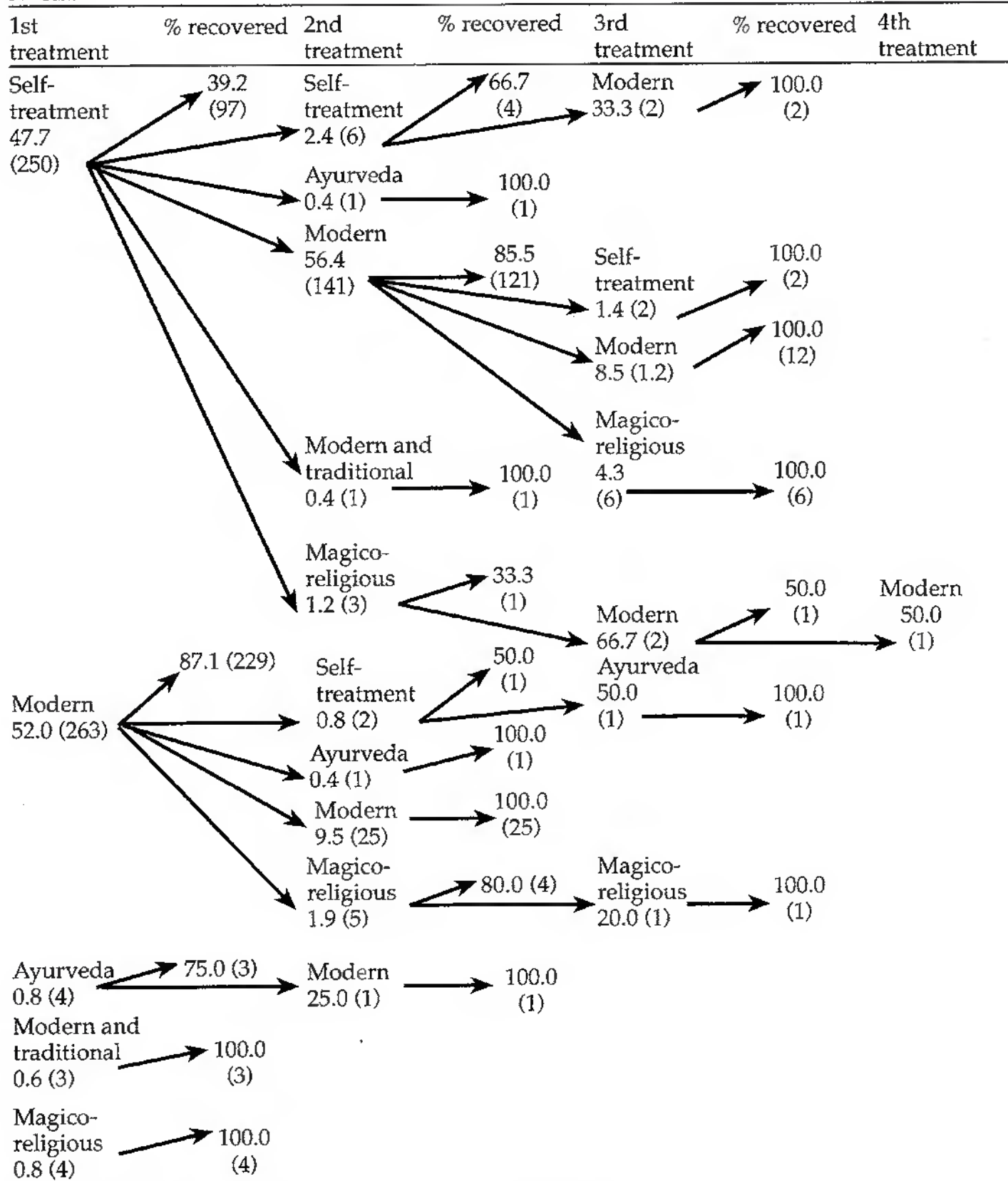


FIG. 15.1 Order and nature of treatment of fever

Numbers in parentheses indicate the number of patients treated.

Source: Primary analysis of Sri Lankan Demographic Change Project Data, 1985 and 1987.

however, understates the importance of Ayurvedic medicine. While formal use of Ayurvedic medicine is slight, most self-treatment consists of herbs which are a form of Ayurvedic treatment. Indeed, the very diet of most patients also forms part of Ayurvedic treatment as a continuing process in which modern treatments form isolated events. However, this is not how the situation is perceived by Sri Lankans; they see the various treatments adopted as mutually reinforcing each other. The importance

N=374

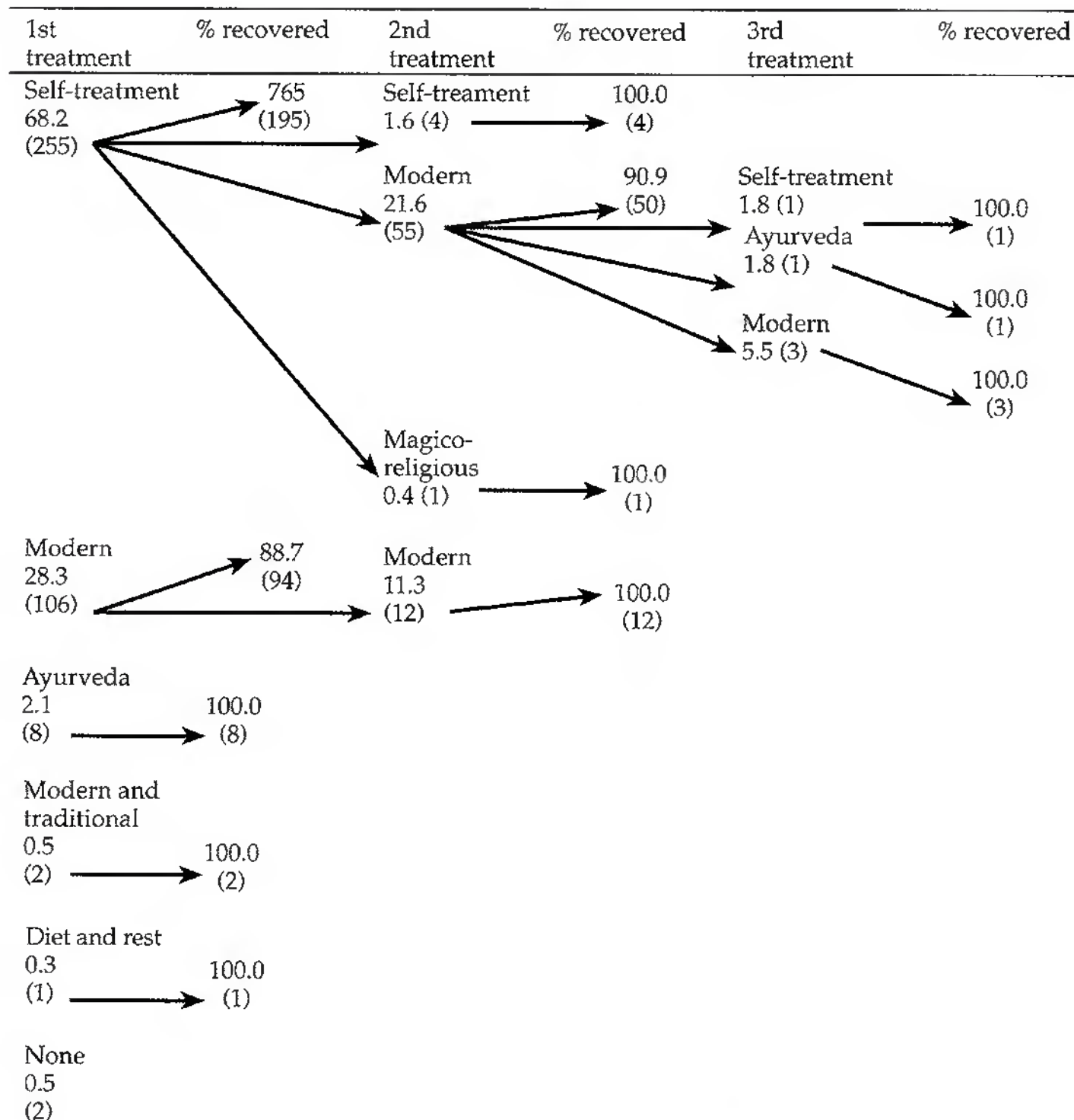


FIG. 15.2 Order and nature of treatment for colds/coughs/catarrh

Numbers in parentheses indicate the number of patients treated.

Source: Primary analysis of Sri Lankan Demographic Change Project Data, 1985 and 1987.

of Ayurvedic medicine is also understated by restricting the analysis to illnesses that have been cured. Where other treatments have failed, Sri Lankans generally turn to Ayurvedic treatments in an attempt to cure the underlying disease and to reduce the suffering of the patient.

Colds and coughs are regarded as particularly suited to Ayurvedic herbal self-treatments, partly because they are not very serious, and partly because their symptoms such as phlegm are regarded as being symptomatic of a body that is not in proper balance. For chronic illnesses Ayurvedic treatment and home-made medicines are particularly common:

N=111

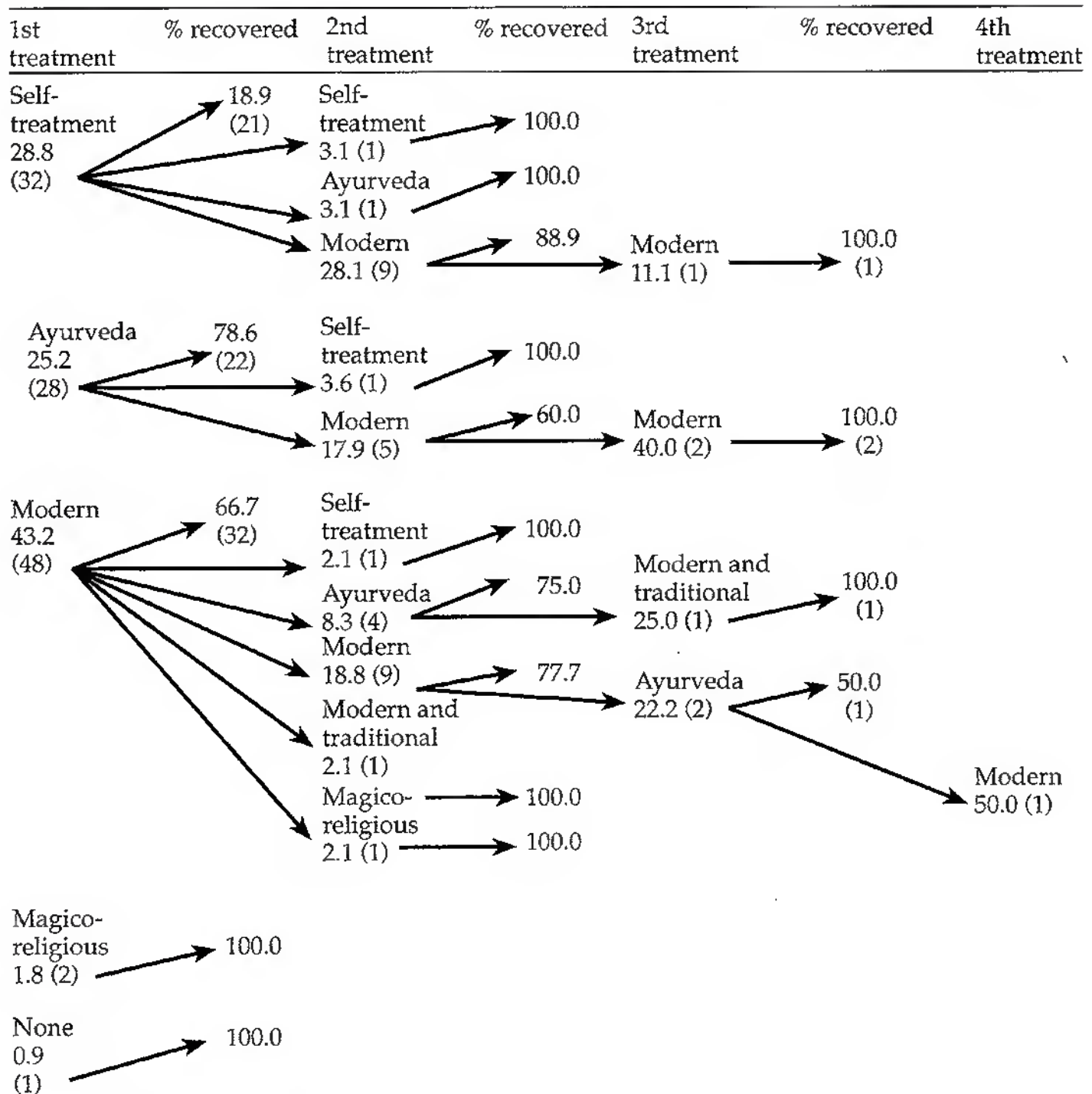


FIG. 15.3 Order and nature of treatment for rheumatism

Numbers in parentheses indicate the number of patients treated.

Source: Primary analysis of Sri Lankan Demographic Change Project Data, 1985 and 1987.

see Fig. 15.3 on chronic illnesses, where 52 per cent of the patients have been cured by Ayurvedic and home medicine. As most chronic illnesses are never fully cured, this flow-chart understates the number of people suffering from such illnesses.

It is a common practice among Sri Lankans to use self-medication first as it may be some time before it is possible to see a doctor. People learn of appropriate self-treatments from their parents or from former experience of similar disorders. People then usually turn to modern health care, either a hospital or a private doctor. Modern health care is used because it is cheap, and provides quick relief. In contrast, as mentioned earlier, traditional cures take a long time to work. It is believed that, once

the danger is removed by modern medicine, then the underlying cause should be cured by traditional medicine and proper diet. The reasons for the pluralistic practice of health services revealed by the flow-charts are explored in the case studies below.

Household number 3012

When we are sick, we use the hospital, private doctors, and home medicine. We like hospital treatment because it doesn't cost anything. If we have fevers, headaches, or coughs we get hospital treatment. If the treatment doesn't make us better we go to a private doctor. With fever, first we use home medicine, coriander water, *pathpadagam*,⁴ and *wenivelgeta*;⁵ if it doesn't get better we take Disprin or Panadol and if that doesn't work we go to hospital.

Household number 3019

I always try to cure illness with home medicine. When the children have slight fever or cold I don't take them to the hospital, I give them Panadol and coriander water and put some ice on the child's head. It is very difficult to go to the hospital always. In any case the children will soon be cured by using home medicine. My youngest child is always suffering from asthma. For this I take him to the private doctors because it is serious. But I don't do it always; when I went to the private doctor he gave me some tablets suitable for asthma, so when the child is suffering from this illness I buy these tablets from the pharmacy.

Household number 3023

Usually we go to the hospital to take treatment. Before going to the hospital I make some medicine at home for some illnesses. When we have slight fever, cold, cough, or headache we use Panadol or Disprin or drink coriander water. But I am afraid to use home medicine for a long time for my husband and children because the children are very small and my husband is the only one who earns money for the family. So I try to get them to the hospital if they are not cured after using home medicine for 3 or 4 days. When we have serious illness we go to the private doctors . . . Sometimes we go to the mosque when we are sick (not for specific illnesses) and our religious leader charms some water and puts it on the patient's face.

Serious diseases, such as the major respiratory diseases and diseases of the circulatory system, are normally treated by modern health care (see Figs. 15.4 and 15.5). Major respiratory diseases are believed to be the result of humoral imbalances, while diseases of the circulatory system and cancers are believed to be due to one's *Karma* (punishment for deeds performed in previous lives). Nevertheless, these diseases are treated by modern medicine, because people understand that immediate medical attention may bring relief and even cure. Diseases regarded as serious or life-threatening are usually treated by modern medicine because of its efficacy and because the importance of quick treatment is understood. With traditional treatments, there is a risk that the patients may die before the treatment has had its effect. Traditional treatments, however, are preferred for less serious illnesses.

N=124

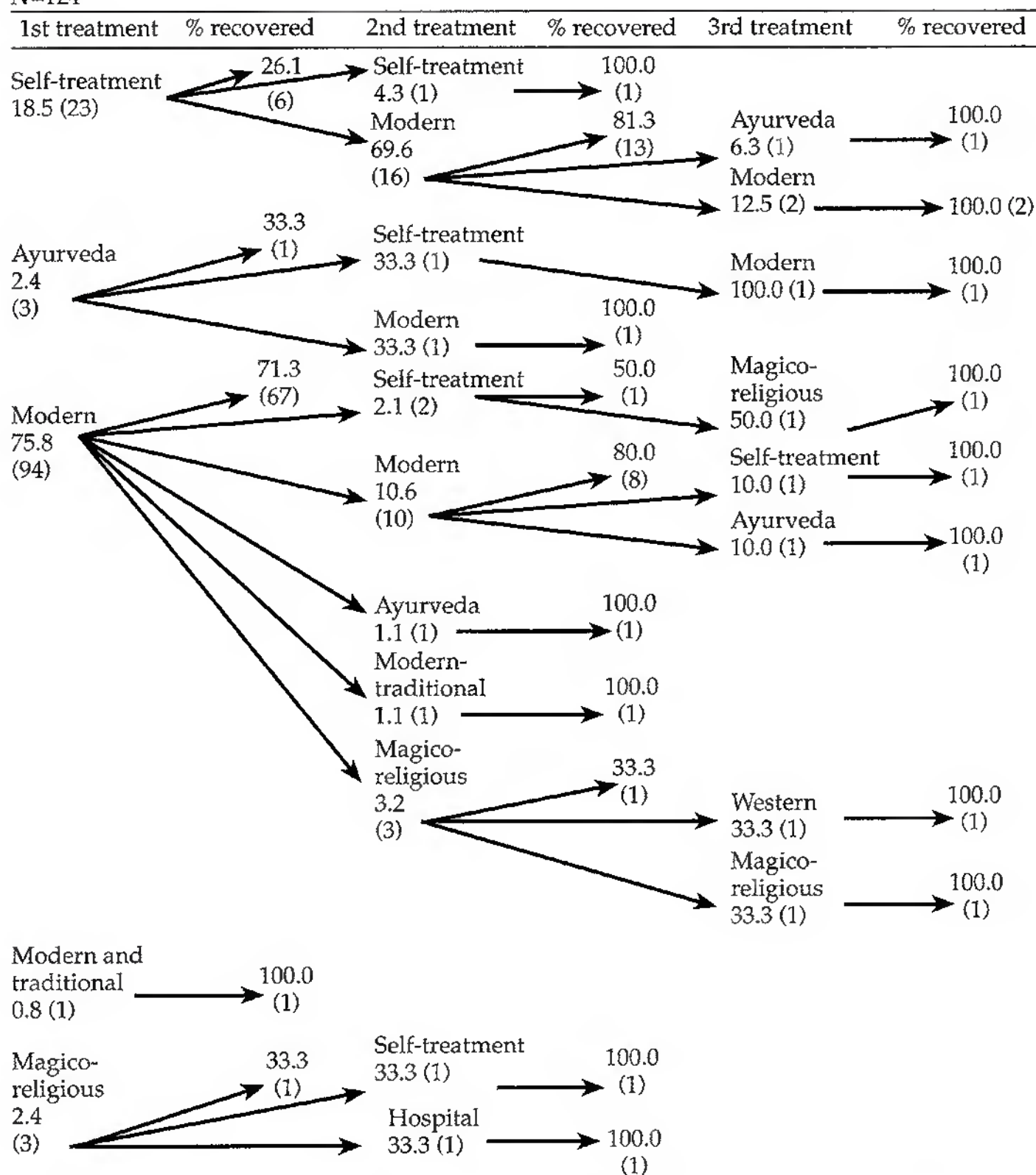


FIG. 15.4 Order and nature of treatment for other respiratory illnesses
Numbers in parentheses indicate the number of patients treated.

Source: Primary analysis of Sri Lankan Demographic Change Project Data, 1985 and 1987.

Diseases said to be caused by supernatural powers are also treated first with modern medicine: magico-religious cures are usually sought only as a last resort after other available forms of treatments have failed. Fig. 15.6 shows how mental and psychological diseases are initially treated and how some people subsequently change to magico-religious treatments. However, because of the long-term nature of such illnesses and the analysis being restricted to those who have recovered, the numbers are very small.

N=37

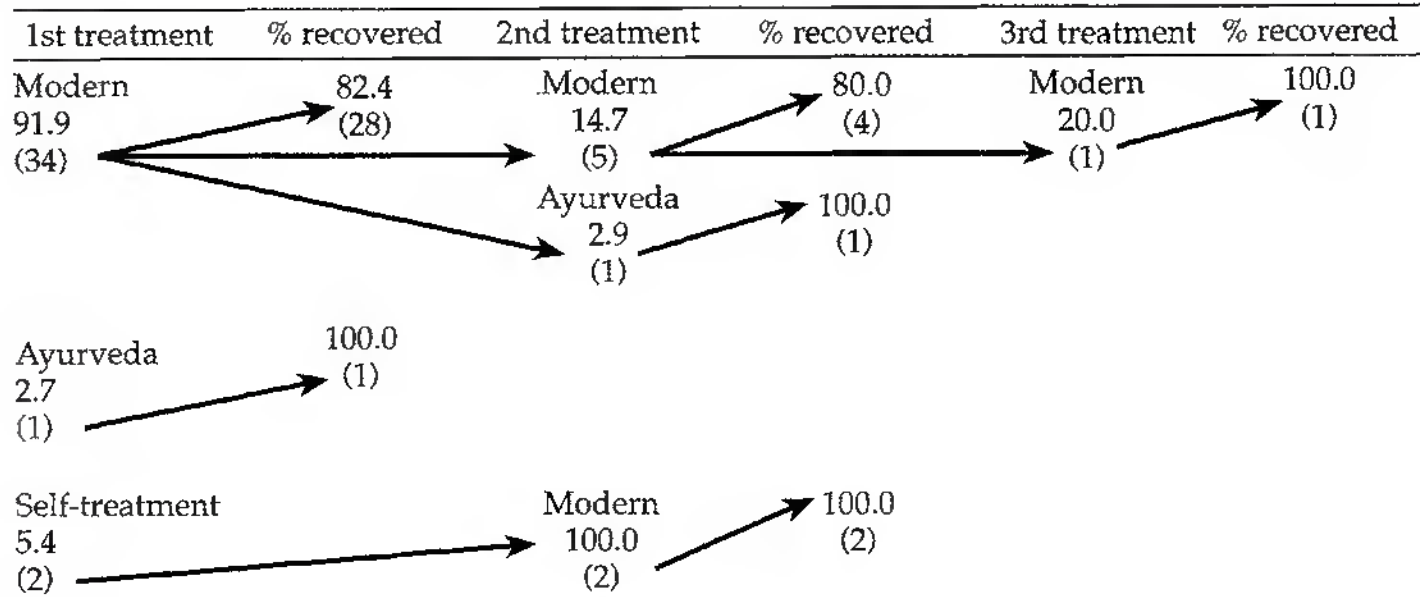


FIG. 15.5 Order and nature of treatment of disease of circulatory system
Numbers in parentheses indicate the number of patients treated.

Source: Primary analysis of Sri Lankan Demographic Change Project Data, 1985 and 1987.

N=13

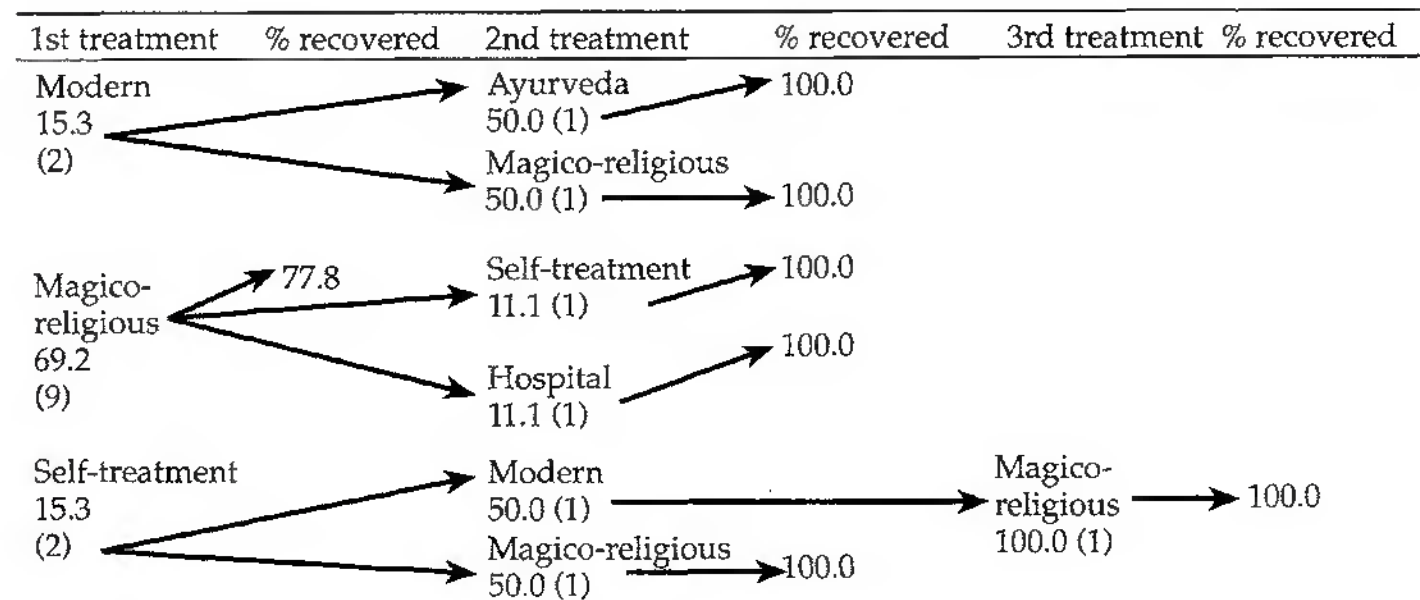


FIG. 15.6 Order and nature of treatment of mental and psychological disorders
Numbers in parentheses indicate the number of patients treated.

Source: Primary analysis of Sri Lankan Demographic Change Project Data, 1985 and 1987.

People appear to decide that certain ailments are due to supernatural influence only after modern treatments have failed. Some light is cast on this by the in-depth interviews.

Household number 3044

... the doctors of the hospital do not examine the patients well. The private doctors are not like that ... But sometimes the patients are not cured even after private treatment ... My married son, Siri, was suffering from a high fever, vomiting, asthma, and cough, and although he had treatments from hospital and

private doctors he was not cured. At last we thought that he was possessed by a spirit and it would be good to hold a *thovil* ceremony. We had to spend about 500 rupees for it; after that Siri was cured and he is well now.

Household number 4031

I had a fever and spent about 500 rupees for Western-type medicine but I couldn't get well; I got well from a *thovil*.

Kapferer, who studied Sri Lankan healing traditions, noted that people generally used modern health services before seeking a cure from an exorcist. From the cases he observed during his field work, he stated:

I have witnessed the performance of major exorcisms after the patient has outwardly, at least, appeared to have recovered from a bout of illness. Some patients only exhibited mild symptoms. These were frequently of an everyday order manageable by Sinhalese outside the context of exorcism practice. Patients complained of headaches, colds, bowel irregularity, of feeling faint, and not wanting to eat. I am aware that these symptoms might relate to serious underlying disease in a Western biomedical sense. But the patients who complained of these disorders often had attended government or private medical clinics and had failed to have a more serious problem diagnosed. (Kapferer 1983: 61)

An important reason why people do not use magico-religious treatments in the first place is not that people do not believe in their need, but, as noted of traditional herbal medicine, the treatments are very expensive and, therefore, are used only when there is no alternative. In comparison, modern treatments are extremely cheap and often free in government hospitals and dispensaries. Nevertheless, when supernatural causes are judged to be clearly the cause of the illness, then the victim may proceed directly to magico-religious treatment.

Reasons for Changing Treatment

The survey confirms that Sri Lankans put great emphasis on curing illnesses. This is important because preventive services have not eradicated all diseases, and infectious and parasitic diseases are still the major killers of young children (Ministry of Health 1986). The diseases people reported themselves as suffering from during the survey were mainly minor ailments. Minor ailments, which are not dangerous to life, are treated initially mostly by home remedies. However, when these do not work, patients usually quickly seek professional care.

This emphasis on curing illness leads Sri Lankans to use all available health facilities. This is in marked contrast to J. C. Caldwell *et al.*'s (1983: 203) findings in rural South India, where people did not always continue treatment until the patient had recovered; commonly, families decided that the patient was going to die anyway and stopped treatment.

An important difference between Sri Lankan and Indian society is in decision-making within the family. A greater degree of female autonomy in Sri Lanka enables women to play a constructive role in health care. If a child is sick the mother can decide on her own initiative to seek treatment. This is often not true elsewhere in South Asia. J. C. Caldwell *et al.* (1983: 200–1) noted that in India young mothers normally have little responsibility for a sick child's treatment, the decision to use a modern or traditional healer being one for the husband or in-laws. Even if she could take responsibility, it might be thought improper for her to go to a health clinic which might be far from her home. While the mother can give some home remedies, the child may not be taken to a health clinic or a hospital until it is too late. Sri Lanka's high education levels mean that the mothers are able to respond appropriately. Diseases are more likely to be misclassified by uneducated mothers and therefore treated by the wrong medicine. This is a particular danger if a professional doctor is not consulted.

The ability of Sri Lankans to seek treatment has been made very much easier by Sri Lanka's developed transport system, which means that it is comparatively easy to visit a good doctor or health facility in another area. Many people, particularly in the Western Province where the field sites of the SLDCP were mostly located, live in rural areas but commute daily to Colombo or other towns for jobs and education. This means they have easy access to health services. This non-agricultural occupational structure has also influenced their attitudes and made them open to new ideas.

FAMILY STRUCTURE AND HEALTH DECISION-MAKING

An important factor in the ability of Sri Lankans to respond to illness has been the influential position of women with regard to family decisions, and also there is the generally open nature of decision-making within the family. This section examines this issue in more detail and looks at the underlying factors by reference to a provocative article by Dyson and Moore (1983) on the existence of two distinct demographic regimes in North and South India. Although the authors are referring to India, their regimes may be extended by analogy to all of South Asia; indeed, their southern model draws very heavily for its ethnographic description on Yalman's (1971) study of Sinhalese Kandyan society in Sri Lanka (see B. Caldwell 1992). Dyson and Moore (1983: 42–7) distinguish between a northern model with high mortality and fertility and a high sex ratio, and a southern one, which is much lower in all respects. They explain the two demographic regimes in terms of the family system and its effect on female autonomy.

The North Indian family is based on the male line. Women are peripheral. They are cut off from their families by a prohibition on the marriage of relatives and a strong preference for village exogamy, where brides have to marry away from their families. In line with the emphasis on the male line, women do not inherit property. The consequence of this strong emphasis on patriarchy and the patriarchal family is that the family guards against couples becoming too emotionally attached, as this could threaten the unity of the extended family. Families tend to be large, consisting of a joint family of all the men's *agnates*, or relatives through the male line.

In contrast, the southern family system depends on the links created by marriage. It allows and even encourages marriages between relatives, the favoured marriage involving cross-cousins, that is a man marrying his father's sister's daughter or, more usually, his mother's brother's daughter. Women may inherit, and family sizes tend to be smaller, being based on the *affinal* link between husband and wife (Yalman 1971).

The two different family systems have very different implications for the position of women. In the northern family a woman, especially a daughter-in-law, is marginal to her new family, and hence to the decision-making process of the family, even in regard to her own children, who are regarded as belonging to the male line. In contrast, in the southern system a young wife is much more central to the family and its decision-making process. The central unit in the Sinhalese family is the conjugal relationship of husband and wife. The wife has a recognized role in decision-making, though it may be subordinate to that of her husband. Her position is enhanced by the fact that she may be related to her husband's family and in any case her family is usually close at hand. It is significant that she may bring property into the new household, not only as dowry, as in the northern family where it is generally taken as the husband's right, but also as her own inheritance.

The implication of this difference in family systems for health behaviour is very considerable. Southern Indian and Sri Lankan women are more able to use their own initiative in seeking treatment than are their equivalents further north in India and in the rest of South Asia. This can be important when no one else is present in the household and when treatment is urgent. It is also important since the mother is usually more aware of her family's health than others. In addition, it is a matter of priorities: a mother is much more likely to regard treatment of her children as an urgent requirement than is even the children's father or more especially his family. In the joint households of North India, there may be a feeling that a little illness is not a concern and indeed may be even good for the child; besides, too much attention to children may be regarded as indulgence which conflicts with the respect for the aged that

is central to such families. These attitudes are especially the case with regard to girl-children, and even adult women, who are expected to be subordinate, and whose health is regarded as less important than that of the men who are the breadwinners and the boy-children who will carry on the family line. Furthermore, in a traditionally patriarchal society, what little influence a woman has may depend on her showing that she is particularly respectful of traditional authority. This itself would discourage the innovative attitude required, for example, in adopting new health treatments.

In the SLDCP women were asked in Welisara and the estate who decides when a mother takes a child to hospital. Almost half in Welisara said 'the mother alone' (48 per cent); most of the remainder replied 'the mother with her husband's agreement' (45 per cent); a mere 7 per cent said it was the husband's decision alone. In the estate only 9 per cent said that the mother made the decision alone; the majority response was that the decision was made with the husband's agreement, with a sizeable minority (19 per cent) of respondents saying that it was principally a decision of the husband.

Both these communities, that is the predominantly Sinhalese Welisara and the majority Indian Tamil estate, belong to the southern Indian-type family system referred to above. Nevertheless, it is clear that there is a substantial difference between the behaviour of Welisara families and estate families. The Indian Tamil family system may have been influenced by the North Indian family system—the joint family being regarded as the ideal Hindu family—and this may have reduced the autonomy of action permitted to women. However, this acceptance of the North Indian model is not universal in South India; it is not true of the state of Kerala, which, not coincidentally, has many of the demographic characteristics of Sri Lanka, and similar health behaviour.

By and large, Welisara women and other lowland women have considerable autonomy in making decisions to take children to hospital, though close to half would prefer the agreement of their husbands. In the estate, the men retain a much greater authority. Very similar results were found when we asked women about non-health decision-making, e.g. in household expenditure and family planning. In Welisara it was primarily the wife who decided; in the estate, the husband.

The figures were examined by reference to religion and education. Unfortunately, the figures are small and Welisara is ethnically fairly homogeneous. Although religiously it is divided between Buddhists and Christians, most of these are Sinhalese and the two religious groups demonstrate similar characteristics. In terms of education there is surprisingly little difference. So education may not be the primary factor behind the high degree of autonomy of Sri Lankan women, and more

ancient cultural factors such as the family system, referred to above, may be more important. Also, where education levels are already very high, the whole society may be linked with the new values accompanying education.

SUMMARY AND CONCLUSIONS

This paper has examined the contribution of behavioural factors to Sri Lanka's health transition. The paper focuses on the reported illnesses from which people in the study areas were suffering at the time of the survey, and the ways in which they coped with their illnesses.

The study found that in general Sri Lankans were sensitive to illness and responded quickly to it, usually by resorting to Western medicine either from a government clinic or from a private doctor. This sensitivity to illness is very deep-rooted in Sri Lankan culture, and apparently long precedes modern education. Sri Lankans in general take any form of illness extremely seriously, and a Sri Lankan woman who does not seek early treatment for a child, for example, will be rebuked as not being a good mother. Nevertheless, as the study brought out, there are exceptions to the rule. Urban slum residents appeared to have under-reported the occurrence of minor illnesses such as common colds, as it was observed at the time of survey that most children in the area had colds. The neglect of the common cold in slum areas and the unfavourable environmental conditions could have been contributory factors for the high incidence of bronchitis and pneumonia in these areas. In contrast, in the urban middle-class and rural areas people took such minor illnesses very seriously and promptly treated them, mostly with home-made herbal medicine (self-treatment). The difference was partly that the slums had a higher proportion of Muslims and Hindus, who are more likely to attribute illness to God and thus to see it as untreatable. This was not the case with the majority Sinhalese population, who have long sought treatment for illness using a variety of traditional medical systems including, most importantly, Ayurvedic medicine.

Their sensitivity to illness helps to explain the major emphasis on health treatment in Sri Lankan society. It does not explain the high usage of modern medicine; this is evidently due to its proved efficacy as well as its comparative cheapness. Nevertheless, it was clear from the survey respondents that few understood its theoretical basis as in germ theory. Significantly, respondents often practised it in conjunction or sequentially to indigenous treatment. The important point for the acceptance of modern medicine was that the traditional medical system of Sri Lanka was essentially a pragmatic approach to treatment which provided a way of classifying disease by supposed cause, and then suggested appropriate

treatments. While its explanation of disease causation may differ from that of modern medicine, its pragmatic approach to disease treatment facilitated the acceptance of new methods of disease treatment.

Traditional forms of medicine (Ayurveda and supernatural practices) still have an importance in Sri Lankan society. Ayurvedic medicine is popular among both rural and urban Sinhalese, particularly for treating chronic conditions. Among the Muslims and the Tamils, the use of talismans and prayers and vows to God are common treatments. In Sinhalese areas the practice of supernatural cures such as exorcism and the tying of *yantra* (talismans) has declined over the years, but has not fully disappeared. Today such traditional treatments are used mainly as a last resort for selected illnesses, such as mental illnesses, when everything else has failed. Nevertheless, practices such as making vows at times of infectious diseases and giving alms to nursing mothers are still commonly performed by the Sinhalese. The difference between the ethnic groups in terms of using supernatural cures may not only be due to different cultural beliefs in supernatural treatment but may also reflect differences in the costs of the rituals used by particular communities, as well as differences in educational attainment of community members.

An important finding in terms of health treatment behaviour is that, although some preference is given to males in the society, this does not generally translate into discrimination against females in health treatment or against children compared with adult males. These are undoubtedly both important factors in the remarkable extent of Sri Lanka's mortality decline.

A notable feature of Sri Lankans' health behaviour, particularly that of the Sinhalese, regardless of their religion, education, or the age and sex of the patient, is their willingness to change treatment when one treatment type is evaluated to be ineffective. Usually people started with self-treatment, generally herbal or shop-bought analgesics and other medicines available to them; subsequently they will seek professional treatment. On average, people persisted with each treatment for about three days, and then, if the treatment did not seem to be effective, they returned to the same doctor or switched to a different doctor for further treatment. In the estate, people continued to use self-treatment as the second and third treatment to a greater degree than did people elsewhere. They usually delayed seeking professional assistance until they had time off work, normally at the weekend. The analysis of the process of health treatment clearly showed that supernatural treatments are used mainly as a last resort, except for mental illnesses, or when the cause of illness was unclear to the people.

The unusual pattern of behaviour at times of illness, that is the evaluation of the care received and the changing of treatment if the patient did not appear to be responding to it, is the result of many forces working

in Sri Lankan society. First, there is the desire to maintain good health within the family, a fact emphasized in Buddhism; second, there is the availability of free and paid health services; third, there is the highly developed transport system that gives accessibility; and fourth, there is the freedom and ability of females to go out and discuss health matters with the authorities. Female freedom, however, is enjoyed most by the Sinhalese women, owing to a mutually reinforcing combination of socio-cultural factors, such as a relatively open family system, a high regard given to women in Buddhism, and their comparatively high educational levels; less freedom is given to Muslim and Tamil women. Education has been comparatively denied to Muslim women, and to some extent to Indian Tamil women, precisely because it is feared that it will make them more autonomous. The availability of schooling has compounded the pre-existing situation by increasing freedom among females in those communities where the comparative freedom of girls made female education possible.

Attitudes and the sensitivity of people towards the need to cure the sick have been encouraged by various social changes that have taken place in Sri Lanka since the beginning of the twentieth century. The most important of these changes is the increased education, particularly of women, which has encouraged female autonomy in family decision-making. Decision-making regarding the treatment of different illnesses at various stages and the willingness to experiment with new forms of treatment are also described.

Finally, what are the policy implications of health transition as applied to Sri Lanka? Sri Lanka demonstrates what can be achieved in a poor country through the provision of an effective, efficient, and equitable health service which emphasizes the local supply of basic preventive and curative services. Its success has reflected the active interest and involvement of Sri Lankans for a host of reasons, not all of which are replicable elsewhere, but which should be harnessed when they exist; where they do not, policy-makers should examine how similar outcomes can be brought about. Clearly, the acceptance of the need for health care is important and should be encouraged. This unfortunately is not easily achieved, though education programmes have an important role here.

Similarly, the ability of both men and women to seek health treatment has been critical in Sri Lanka. This has reflected historical social and behavioural factors deriving from the structure of the family; it has, however, been augmented by high rates of female education. Other countries may lack Sri Lanka's historical basis for the involvement of all in the health seeking process, but they should work to promote it, particularly by emphasizing such important factors as female education, and by designing their health systems to encourage the involvement of women.

NOTES

1. The SLDCP was a joint programme between the Demographic Training and Research Unit (DTRU), University of Colombo, and the Department of Demography, Australian National University. It was a multi-purpose survey and in-depth study which collected information on marriage, fertility, health and mortality, and migration. This paper draws on the health and mortality-related information gathered. Data collection in the SLDCP included a structured survey-type questionnaire and a census of over 12,000 persons from 2,200 households to provide a basic demographic overview of the communities. The survey also used a community-level micro approach combining an anthropological participant-observation study and in-depth interviews. All the major ethnic and religious groups of Sri Lanka were included in the survey, and the survey areas were chosen from all three of the major recognized sectors of the population: urban, rural, and estate.
2. 'Vicks Vapo-Rub', which is used as an inhalant for nasal congestion.
3. For modern medicine one does not need to be able to read a prescription, as the chemist does the reading, but one should be able to read the label on the medicine packet to know when and how much medicine should be administered. When people use Ayurvedic medicine, the prescription is the only information on medicine and the dosages that should be taken, how long the herb/s should be boiled, how much should be given to a patient, and how often. Women are the ones who prepare such medicines, and it is obviously very useful if they can read.
4. *Pathpadagam* is made by drying a plant called prickly nightshade; the botanical term is *Solanum jacquini* (Carter 1924).
5. The botanical name for *Wenivelgeta* is *Coscinium fenestratum* (Carter 1924).

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PART IV

The Place of Policy in
the Explanation of Recent
Fertility Declines

The Governance of Fertility Transition: *Reflections on the Asian Experience*

GEOFFREY MCNICOLL

The major advances in fertility theory and theorizing in recent decades have come from investigation and modelling at the family level. Beckerian household economics offers a formal analytical structure within which to derive hypotheses about individual and family demographic response to changing economic circumstances. Caldwellian quasi-anthropology depicts demography at the grass roots—more precisely, in the thatch hut and village market—using a research methodology that supplements the dry and formulaic categories of fertility surveys with thickly detailed responses and scope for triangulation from neighbour, kin, and local official. Fertility studies have become firmly grounded in the family, whether apprehended through abstract micro-economic analysis or through efforts to lay out and create order from the messy realities of everyday life.

Such an emphasis has much to commend it. Fertility decisions are made within a family setting, subject to intergenerational and intergender power relations, to the exigencies of the family economy, and to local interpretations of often-elastic cultural prescriptions. If you would understand what happens, *cherchez la famille*. One has only to recall the contrasting ‘planning ministry view’ of fertility change—now no doubt a caricature, but once seriously entertained—in which government is a puller of levers, depressing fertility by speeding the flow of contraceptives or directing funds to ‘population education’, to appreciate what is gained by the shift of ground.

Something may also be lost, however. Along with the demise of the planning ministry model may go any more general appreciation of political economy, political culture, and administrative practice—as things that bear on development performance, on social change, and, perhaps incidentally, on fertility. In their place, we are left with the all-too-familiar standard elements of conventional applied demography: an economic reality reduced to simple-minded measures of income and consumption, ill-defined processes of ‘ideational change’ in the form of a depoliticized miasmatic swirl of new ways of thinking about fertility and contraception diffusing over the ether to remote hinterlands, and orderly programme operations that bring the requisite hardware and support services to

translate latent demand for birth control into tangible demographic outcomes. The field badly needs an effort of understanding equivalent in energy and depth to that afforded the micro-demographic research programme directed at illuminating this supra-family realm.

The present topic—the role of government and, more generally, of *governance*, in the fertility transition—lies in that realm. Governance has not been of great interest in modern fertility studies. Becker's presidential address to the American Economic Association (Becker 1988) recognized a pressing research agenda for economic demography in bridging the gap between family choice and macroeconomic change. But far emptier are the political reaches where Greenhalgh's (1990) envisaged political economy of fertility would be situated. Of course the grass roots, which provides an unsurpassed view of the immediate terrain of family life, is not the best place from which to observe broader political and administrative affairs. At that focal length, government is a distant reality. Government operatives (or their disembodied messages, pleas, and ukases) from time to time enter the scene as agents of influence. The interaction between government and citizenry on issues of demographic behaviour can then be examined—a matter of some consequence. But the political system from which government policy emerges, and the administrative means through which it and cognate policies are put into effect, remain largely out of view. (Not, however, out of mind: that they play a subordinate part in the explanation of demographic change reflects a judgement of relative importance, not an accident of perspective.)

The argument I made here is that this political-administrative dimension is indeed important for the course of fertility—not least in illuminating most of what matters in antinatalist policy. The method is frankly heuristic: it is more to put the subject into play than to reach closure. I begin with an admittedly cursory discussion of governance issues in some Asian fertility transitions. The two countries most drawn on are Indonesia and Thailand—exemplars of family planning programme success, many would argue, but with apparently very different political histories and development styles. A side look is also taken at some other Asian experience, notably India. From these accounts are distilled some more general observations about governance and fertility, bearing both on what is special about the region and on the thorny issue of transferability of experience.

ADMINISTRATIVE STRENGTH AND FERTILITY DECLINE: CHINA AND INDONESIA

Rather like a travel writer's description of a tourist destination, the demographer's typical account of a family planning programme shows a blanket avoidance of the political. In one case, mention of intrusive

government or simmering disorder is likely to discourage visitors; in the other, it risks muddying the voluntaristic and welfarist assumptions on which programmes are based, complicating the story of fertility decline. That story in its familiar limpid form ties the decline to the provision of family planning services to meet an 'unmet need' for them, either a manifest demand (that is, with a real price elasticity attached) or a 'latent' demand which can be uncovered by skimming off a thin layer of ignorance and suspicion. The family planning movement can thus emphasize its therapeutic mission and its ties to public health policy and a benign medical establishment. In post-Cairo discourse, power can be spoken of, but as an issue that remains safely within the family demesne. The politics of international population activities are largely about the content and wording of declarations such as the Cairo Programme of Action rather than the actual—sometimes quite radical—reforms their implementation would entail.

Fertility patterns are enmeshed in an economic and socio-cultural system—not thereby rendered immobile (rapid change is common enough), but having limited exposure to direct policy action of the familiar kind. Indirectly, of course, policy effects may be profound, working through influences on the directions in which that system itself evolves. Thus, among the sources of fertility change, explicit family planning programme activities may make up a quite small and derivative part.

There are a few modern instances, however, in which direct government action has incontestably had a major effect on fertility, by virtue of its sheer forcefulness. The principal exhibits here are India during the nineteen months of government under the declaration of national emergency in 1975–7 and China during the 'later–longer–fewer' campaign of the 1970s and under the subsequent one-child policy.

In the Emergency, India sought the trappings of a developmentalist state. Stringent labour market discipline was imposed and civil liberties in many spheres were curtailed. The measures were extended to the family planning programme, tightening its administration and mobilizing a wide array of government officials to recruit programme clients. Cash and career incentives to both recruiters and clients were standard, and there were instances of outright compulsion. Sterilizations, the most-used birth control method, had been running at some 1.7 million annually in the ten years up to 1975; in the peak twelve months of the Emergency 8 million sterilizations were reported (Gwatkin 1979: 29). The targeted population were those with three or more children, but the net often took in others. Indira Gandhi's defeat in the election she called in 1977 is believed to have owed much to the programme's excesses.

In the same decade, China too was for the first time attempting to reduce its fertility. With none of India's commitment to democratic process, the antinatalist pressures applied through the government and Party

apparatus were unabated. Fertility plummeted—from a rate of about 6 in 1970 to below 3 in 1979. There were contributing factors in the decline: substantial improvements in health conditions and some in the economy over the period (see Birdsall and Jamison 1983) and possibly a demand effect deriving from the land reforms and co-operativization of the early 1950s. (See McNicoll 1975: the fertility-relevant organizational entities were the brigades and teams, not the cumbersome and futile communes.) However, the leading role of top-down administrative pressure, translated into instruction, harassment, and sanction at the level of local cadre and officialdom, is attested by many studies. Greenhalgh (1988: 660) writes of the 'vertical encapsulation of the peasantry into . . . downward-controlling, politically dominated structures'. 'Constant participation in campaigns, study sessions, and mass meetings has taught peasants to be politically strategic actors—to calculate their self-interests in political terms and to use political means to manipulate the system to achieve their ends.' When the regime decided to promote birth control, it thus had the means to ensure that for parents 'the political costs outweighed the economic benefits of children' (Greenhalgh 1988: 661).

Moreover, although subsequently changes in fertility demand may have caught up with the initial government goals in some regions (particularly in the coastal strip that has experienced such remarkable economic growth), the adoption and dogged pursuit of the one-child policy since 1979 have ensured that strong antinatalist pressure would continue. There is ample evidence that it did—and does (Greenhalgh *et al.* 1994).

It is no surprise that administrative muscle 'works' in affecting fertility. The same kind of pressures and sanctions that maintained political control in China—neighbourhood surveillance, endless meetings and study groups, minutely regulated economic life—could be applied readily to demographic behaviour. When, later, the rural economy was effectively re-privatized in the Dengist reforms, the government could decide not to similarly relinquish its power over fertility. Some demographic control was lost in the area of migration and with the growth of an unregistered population, but fertility policy could—indeed, still can—seemingly be tightened at will. In India, even with a much more disorderly administrative system, the pressures were also demographically effective, albeit briefly and at high and unsustainable political cost for a democratic polity.

These two cases are outliers among fertility programmes, their blatant coercion widely viewed as violating international ethical norms and, in particular, the proclaimed tenets of the family planning movement. There is a grey area of programme practice, however, in which administrative pressures are wielded in support of programme goals but not to the degree that makes for ostracism. Indonesia, widely seen as a stellar success story of family planning, lies here. Indonesian fertility fell by about one child per woman over the 1970s (from a level of about 5.5) and by as much again

over the 1980s. The downward trend continues, with a replacement-level rate only a decade away according to the UN medium projections.

The onset of the decline roughly coincides with the regime change that brought in the New Order government, following the destruction of the Communist Party and mass killings or imprisonment of its supporters. In the aftermath, regional administration, through the Interior Department and a parallel military hierarchy, was greatly strengthened, and most political activity (outside a single state party) was prohibited. The former profusion of ineffective line ministry programmes was replaced by a few hard-edged initiatives that could be promoted through this system, notably agricultural intensification, educational expansion, and, no less prominent, family planning. (This and the following paragraph draw on McNicoll and Singarimbun 1983: chapters 1 and 4.)

Writing on Indonesia in the 1950s, Clifford Geertz (1959: 40) saw 'an insupportably erratic and capricious quality' to village life: 'The extreme inconstancy and opportunism of Indonesian national political life keeps the village continually stirred up, continually uncertain of what to expect next . . .' Heinz Arndt (1975: 85) gives an analogous picture of economic life, with 'everchanging and multiplying regulations [which] superimposed new direct controls on unenforceable older ones', and where 'economic activity continued despite rather than because of the government'. Families could have had no basis for a vision of the future within which much more than day-to-day planning would make sense. Equally, no government programme could effectively mobilize groups at the village level in pursuit of some social goal, least of all one as potentially sensitive as birth control. Under the New Order, the salience of economic realities for fertility decisions starkly emerged. At the same time, the scope for administrative pressures on behaviour and for local mobilization in support of programme objectives was vastly extended, facing no political opposition. As Warwick (1986: 481) put it, 'criticism of any government intervention was a criticism of the government and would not be tolerated'.

The details of family planning programme activities are well described by Warwick (1986) and Hull and Hull (Chapter 17 below). It is a story of competence and enthusiasm as well as of co-optation and pressure. The logistical and reporting aspects of the programme have deservedly been praised. The interest here, however, is in state roles beyond the narrowly programmatic. In the Indonesian story, we see a fertility decline apparently jump-started by an energetic and forceful government. It is China writ small, less coercive in that the objectives were to gain programme clients ('acceptors') rather than directly to limit births, and in that the programme made little use of irreversible methods. But the contrast with China does not extend to tightness of administrative control. Writing just before the Dengist reforms of China's agrarian system, McCawley (1981: 86) contrasted the comparative independence of production teams

and brigades in investment allocation decisions in rural China, albeit within a government-controlled external setting, with the Indonesian situation, where he judged the scope for local decision-making to be markedly less. Paradoxically, 'although the *indirect* government control over the Chinese rural economy is quite pervasive, the hand of government is more *directly* felt in rural Indonesia'.

In Indonesia as in China, of course, forcefulness in this sphere would have been progressively lessened to the extent that economic and social pressures generated a downward shift in family size preferences. Evidence on this point, however, is ambiguous: even in the 1990s, for example, there were strong doubts that the family planning programme could sustain its clientele were it not to provide its supplies and services free or at nominal cost (see World Bank 1990). Hull and Hull in Chapter 17 write that promotion of voluntarism at the top levels of the programme may not translate into altered practice by lower-level operatives, who 'often have interests and leadership styles, not to mention beliefs about the citizenry, which are geared more to authoritarian than to educative or service-oriented approaches'.

TRANSITION SANS GOVERNMENT? STORIES ABOUT THAI FERTILITY

In family planning annals, if there is a success story to trump even Indonesia's, it is that of Thailand. Here, the uneasiness provoked by the Indonesian political setting—the quiescent aftermath of the 1965 anti-communist massacres, the stringent depoliticization of rural life, the militarization of local government—can be set aside: the Thai case is presented as family planning pure and simple.

The Thai fertility decline began a little earlier than Indonesia's—in the mid-1960s—and was somewhat sharper, halving in two decades and now stable at replacement level. The best known account of the decline is that of John Knodel and colleagues—in a series of articles and in a monographic treatment (Knodel *et al.* 1987). It is grounded on a thorough analysis of fertility survey data and on focus-group research. The explanation that emerges is woven out of four strands:

1. rapid and fundamental social and economic change that has made large families more of an economic burden to parents, working especially through rising aspirations to join the emerging consumer society and the expenses of educating children beyond elementary level;
2. a cultural setting that does not interpose obstacles to birth control such as pronatalist influence from older kin or religious tenets narrowing contraceptive choice (but that, supposedly, does not countenance abortion or favour abstinence);

3. prior latent demand for fertility control, unmet because of the lack of knowledge of effective means;
4. the organized promotion of family planning through information campaigns and distribution of contraceptives.

We can set aside strand 2 as referring to background characteristics of the society rather than to components of social change. We are left with the familiar explanatory calculus, what is often called the 'Princeton model' of fertility transition, in which a gradual accretion of latent demand, an outcome of strand 1, can be quickly converted to a fertility decline by family planning programme activities.

Some other accounts of the Thai experience vary the explanatory balance, usually in greater celebration of the family planning programme. Rosenfield *et al.* (1982) asserted that the revolution in reproductive behaviour was accompanied by 'only modest increases in economic development' (p. 44). Latent demand, however, was heavily present: there had been two population doublings over the half-century up to the 1960s and, according to an early-1960s survey they cite, three-quarters of reproductive-age couples wanted no more children.

We note in passing the implied helplessness of parents in the face of an onslaught of births. Thai parents, based on focus-group evidence, had been interested in limiting family size 'for at least a generation prior to the onset of fertility decline', but 'the means of effective birth control were unknown or lacking' (Knodel *et al.* 1987: 198–9). (Speaking of analogous arguments in a different society and a different century, but at a similar stage of demographic development, John Stuart Mill remarked that they seem to assume 'that children were rained down upon married people direct from heaven, without their being art or part in the matter'.)

The rapid take-up of modern contraception (mainly IUDs) from the earliest public family planning clinics seemed to bear out the helplessness proposition (see Fawcett *et al.* 1967). Nevertheless, the relevant counterfactual has not been well explored. In a standard work on Thai social change in the 1950s and 1960s, Rosen (1975) describes a rapidly de-traditionalizing rural society with emerging land scarcities, increasing wage labour and economic differentiation, and a shift from a stable family-centred rural economy to one characterized by 'non-kin based, amorphous, and short-term' clientage and 'specific quid pro quos' (p. 140). This is the setting in which the 'latent demand' arose. What would have happened to fertility had the government done nothing—had announced, in Eisenhower fashion, that family size was not its business? The answer can scarcely be in doubt: Thais would have shown the same ingenuity in this as they have in other facets of societal modernization, with some combination of home-grown recipes and entrepreneurial enterprise filling in for absent government. There may have been greater delay—or, the more

familiar argument in other realms, change may have proceeded faster without a direct public-sector involvement.

In the Knodel *et al.* account, government is virtually invisible in any other than a programme-administering role. We are at most made dimly aware of it as the presumable source of the 'relatively stable political climate' (Knodel *et al.* 1987: 117) that facilitated Thailand's impressive pace of economic growth (an average 7 per cent annual increase in GDP over 1965–80). Yet in any reading on postwar Thai economy and society outside the population sphere, government is a major presence; Chai-Anan Samudavanija and Sukhumbhand Paribatra write as follows:

It was in the late 1950s and early 1960s that Thai military leaders incorporated economic development as an integral part of their strategy to create stability and security for both the region and the nation. With the assistance of foreign and local advisors, the government promoted what can be termed the 'ideology' of development, which helped to transform a faction-ridden bureaucratic polity into a more unified activist bureaucratic state. (Chai-Anan and Sukhumbhand 1993: 136)

In a similar vein, Philip Hirsch (1990: 228) sketches a 'strong state/weak society' picture of Thailand, with a bureaucracy in which 'accountability to seniors and lack of accountability downward lead[s] to a hierarchical and non-participatory mode of action that readily extends itself to the bureaucratization of village procedures'.

In both of these accounts, the picture is highly reminiscent of Indonesia. Another scholar, Andrew Turton (1989), makes the parallel explicit. He remarks on the 'authoritarian practices which suppress forms of political organization and dissent' in rural Thailand. Through its various programmes and political patronage, the state in effect has 'bought' a rural constituency that can work on its behalf. 'These local powers are integrally involved in increasing state "penetration" of village political and administrative process, which is often officially subsumed under the category "development" but which includes a proliferation of forms of social surveillance and control'. He draws an explicit parallel with Indonesia's state-society relations: 'While "democracy" and "participation" are watchwords of policy, government strategy seems in effect to somewhat resemble the Indonesian New Order state's "floating mass" strategy of separating the rural population from organized political activity' (Turton 1989: 66–7).

With prosperity and the decline of perceived external security threats has come a liberalizing of Thai politics, increasingly felt beyond the urban centres. Greater geographic mobility, wider labour markets, and diversification out of agriculture all tend to diminish the authoritarianism of village life. No doubt these processes render the above descriptions steadily less applicable to the situation as time passes. The relevant period

for the argument here, however, is the time of fastest fertility decline, especially the 1970s.

The parallel with Indonesia does not extend, of course, to the mechanics of client mobilization that have characterized the Indonesian family planning programme—a *fortiori*, not to the involvement of the military in programme activities (the Thai military had other, more conventional, security concerns). Perhaps for this reason the perception of government influence in the Thai case has been focused on the welfarist aspects of the programme: its informational campaigns, its distribution system, the operations of clinics. Perceptions are also governed by the programme's proclivity—shared by family planning programmes everywhere—to conflate proximate fertility determinants with determinants and to lay claim to any fertility change around. The dramatic scale of the decline in Thailand presented plenty of kudos to be claimed.

POLITICAL WILL AND ADMINISTRATIVE DISORDER: AN INTERPRETATION OF THE INDIAN TRANSITION

In writings about economic development, 'Asia' frequently means East Asia, the Pacific Rim states that have so thrived in recent decades. South Asia is virtually read out of the region, an ineffectively statist realm with few of the requisites for NIE-style dynamism. In particular, India is seen as perpetually on the verge of developmentalism but always held back by its inheritance of stultifying bureaucracy—its 'licence-raj'—and by the complications of a society beset by caste-related occupational and social immobility. Tacitly, it can be guessed, blame for poor economic performance is also attached to its traditions of political pluralism and the comparative vigour of its civil society.

India lags in fertility decline behind the Asian front-runners, but not greatly or uniformly. To quote a statement from an earlier case study (McNicoll and Singarimbun 1983: 112): 'It is a curious reflection on the capriciousness (or short attention span) of the international population community that, although Indonesia's demographic transition has roughly paralleled India's over the last two decades [i.e. 1960–80] (with East Java's present fertility on a par with Kerala's or Tamil Nadu's), Indonesia is hailed as a population policy success story while India is typically portrayed as a failure.' The gap may have since widened somewhat, but a fertility decline is now evident even in the once-considered-immutable northern states.

What may the government have done to bring this about? The experience of the family planning programme during the Emergency, described earlier, is often pointed to as a population policy disaster. In addition to the immediate suffering caused, the programme itself was left in disarray and disrepute, taking a number of years to recover. However,

the contrast with the standard Indian programme of earlier or later vintage should not be overdrawn—that at least would be the implication of the account by Vicziany (1982) or of the discussion of the Karnataka case in Caldwell *et al.* (1988).

Caldwell and Caldwell (1988: 25) argue for two complementary programme-related effects on fertility at their Karnataka field site. One is the standard supply function: the birth control facilities offered by the programme, free or highly subsidized. The other, deemed fully as important, is 'the constant visiting, the intervention in family decision-making that often effectively annuls the power of the older generation, the arranging of appointments for sterilization camps in the local health center, and the organizing of people to make sure they get there'. Twenty separate visits from a female health worker over a three-year period would not be an unusual experience for a family with three or four children, ending with the mother agreeing to sterilization. The health workers have more education and are of higher caste than their clients, and combine provision of information with moral suasion (Caldwell *et al.* 1988: 75).

Backing this programme-by-harassment, and arguably helping to explain its persistence and forcefulness, has been the conviction on the part of India's elite (landowners, professionals, government officials, business people) 'that the rapid increase of the poor was in neither the national interest nor their own . . .' (Caldwell and Caldwell 1988: 25). The prevalence of sterilization owes something to the same attitude: 'most of the elite believe that the rural poor could cope with nothing else' (p. 62). This is the sentiment that boiled over in the Emergency—coming from 'the metabolism of the Indian political system and government bureaucracy driven by a mindless top-level enthusiasm for family planning . . .' (Gwatkin 1979: 51).

Authoritarianism thus is not absent from the regular Indian birth control scene. It has elements of Indonesia-style 'special drives' and (in Indonesia's quaintly ominous term) 'safaris'—given a harder edge, moreover, by the irreversibility of the contraceptive method being propagated. As the conventional wisdom of the family planning movement has it, a critical ingredient of success is political will. The innocent version of unmet need has to be considerably qualified—or at the least has to be imputed to young mothers alone, presumed to be disempowered by an unsympathetic spouse and in-laws whose reactionary influence has to be countered.

What is apparently weak or missing in the Indian case is the village as a political entity. Certainly, Indian villages are far removed from the corporate bodies described by institutional economists writing of Japan or parts of South-East Asia—a point made by Wade (1988). Wade portrays the attenuated nature of political life and the public realm in village India: 'There is no clearly defined social domain or institution separate from state authority where choices and activities of a "public" nature are organ-

ized; no center of community management other than the bottom levels of the state apparatus; no administrative staff; and no machinery for raising resources for public purposes other than through state-sanctioned taxation' (p. 4). Villagers are not in consequence individualistic: 'it is just that *territorially-defined* groups like villages are not a focus for their identity and needs' (p. 5). Non-territorial groups, notably the subcaste, are more salient affiliations.

But this view too can be overstated. Wade's 'village republics' are exceptions, where villages did act corporately for certain purposes—in irrigation management, for the most part. The problem is that fertility is a peculiarly difficult object for collective action—the externalities involved are tenuous, temporally removed, and contingent on all kinds of detailed circumstances. It is likely that the spare treatment of politics and administration in the literature on Indian fertility transition is on balance justified. Whether it could be otherwise, however, is then also unexamined.

The future course of Indian fertility may be largely set on the economic front. Several years of strenuous deregulatory efforts appear to be bearing fruit in a substantial improvement of business conditions, freeing up an always robust enterprise culture. However salient the East Asian models may have been in the minds of Indian policy-makers, the reform process will not necessarily create an Indian version of such systems. (In some respects, it might be argued, the reforms have a status that more closely resembles the post-communist transitions in the former Soviet bloc.) But the generation of faster aggregate economic growth has every likelihood of speeding fertility decline.

GOVERNANCE AND THE ASIAN ECONOMIC-DEMOGRAPHIC TRANSFORMATION: REGULARITY AND DURESS

In considering state roles in fertility transition as sketched above, there are clearly both parallels and distinctions to be drawn. As a first, admittedly rough, attempt to analyse the situation, I will distinguish two routes of state influence—aside, that is, from the basic informational and distributive functions that are taken on by any family planning programme (albeit functions that appear to have no essential reason to be in the public sector).

Regularity

The first route is through establishment of order: at the very least, minimal security of person and property if not a thoroughgoing rule of law; in rural areas a territorially defined system of local administration with a degree of predictability in relations with authority; and an environment in which some amount of planning on the part of individuals and perhaps the community makes sense.

The dimension here is not that of the scope of state authority but one of orderliness or *regularity*. It can be achieved variously by authoritarian governments (left or right) with wholly co-opted village leaderships or by social systems in which a high degree of local self-government exists within a fairly liberal polity—famously, by the Swiss. Conversely, the same range of systems can fail to produce it. The direct relationship of regularity in this sense to fertility operates through the plausible conditions for family size to be seen as a salient matter in individual or family well-being and for behaviours with long-run implications to warrant deliberation. (This is not an indirect way of referring to the so-called calculus of conscious choice: the better depiction is of changes in the array of considerations that enter a boundedly rational decision-making process.)

One can conceive of situations in which greater salience for family size would lead to (or perpetuate) a high fertility outcome—an expansive dynastic view of family descent, for instance. The more common situation, however, is one in which state authority and functions are usurping those of kin and community, exposing and delimiting a nuclear family identity and generating the familiar social and economic forces that tend to depress fertility.

There is also an indirect link of regularity to fertility to the extent that the same institutional conditions that make for regularity are also conducive to economic growth. This connection is evidently not a necessary one. Tight administration or rigorous social control is just that—as capable of frustrating economic initiative as of promoting it, depending on how broadly the political system extends its reach. Rural economy and demography, closely tied though we usually see them as being, are readily separable as objects of state intrusiveness. China's dramatic agricultural growth in the 1980s compared with its poor performance in the 1970s resulted from a selective retraction of economic intrusiveness; in the population sphere, intrusiveness if anything increased. When more information on the case becomes available, an illuminating contrast on this subject might be drawn between South and North Korea in the period before democratization took hold in the South; the elements include an apparently strong fertility decline in the North (from 5.7 to 2.5 in the decade and a half from the early 1970s, according to UN estimates) despite a pronatalist government interest and despite (albeit, of course, possibly because of) a disastrous economic picture.

Duress

The second route of state influence is through *duress*: the use of political or administrative pressure or, at the extreme, physical force to attain fertility objectives. As several of the cases described above make clear,

duress can yield results in this sphere as in others. Governments with strong administrative capacities reaching down to localities and families, typically developed in order to maintain internal security or political quiescence, can use those capacities to serve specific development-programme ends. They can, for example, mobilize the rural population behind public works projects such as maintenance of irrigation channels and embankments. Not surprisingly, when birth control comes to be seen as urgent, the same organizing capabilities can be applied to that end. Recruitment of family planning programme clients and harassment of those inclined to demur are the familiar instances.

Many students of fertility transition, as well as family planning programme enthusiasts, have argued for a different kind of state influence on fertility, one that employs softer means: harangue, say, rather than harassment. Its object is to shift individual or family attitudes and, thereby, practice in matters to do with family and fertility—seeking, typically, to lessen gender inequality, emphasize parental responsibilities towards (fewer) children, and legitimize contraceptive methods. The standard examples are presidential speeches, pointed soap operas, advertising campaigns, and so on, which directly or indirectly promote these ends. Undeniably, preferences and perceptions on such matters change, sometimes with remarkable speed in a contagion-like process. More speculative is the linking of such cognitive change to particular interventions, in the presence of so many other sources of new ideas and information. Moreover, cognitive change is likely to be in part attributable to altered material circumstances or opportunities (and thus associated with ‘regularity’), and even to measures falling under the rubric of (mild) duress—with attitudinal change following rather than preceding practice. If so, there may be little for harangue to explain. Family planning rhetoric is often ambiguous in this regard, its insistence on consumer sovereignty in fertility preferences conflicting with its stress on the efficacy of authoritative antinatalist messages.

Characterizing Country Patterns

Regularity and duress are more or less independent. That is, the position of a country on one dimension tells us little about its position on the other. A possible placement of various Asian countries with respect to these axes is suggested in Fig. 16.1. (The effects discussed in the preceding paragraph, if deemed important, could be represented on a third axis, orthogonal to the two in the figure.) The rough time reference here is the decade of the 1970s. On the chart, the greater the distance from the origin, the stronger the presumed state influence on fertility. Furthest along the ‘regularity’ axis are a group of countries that have perhaps little else than this in common: China, Taiwan, South Korea, and Thai-

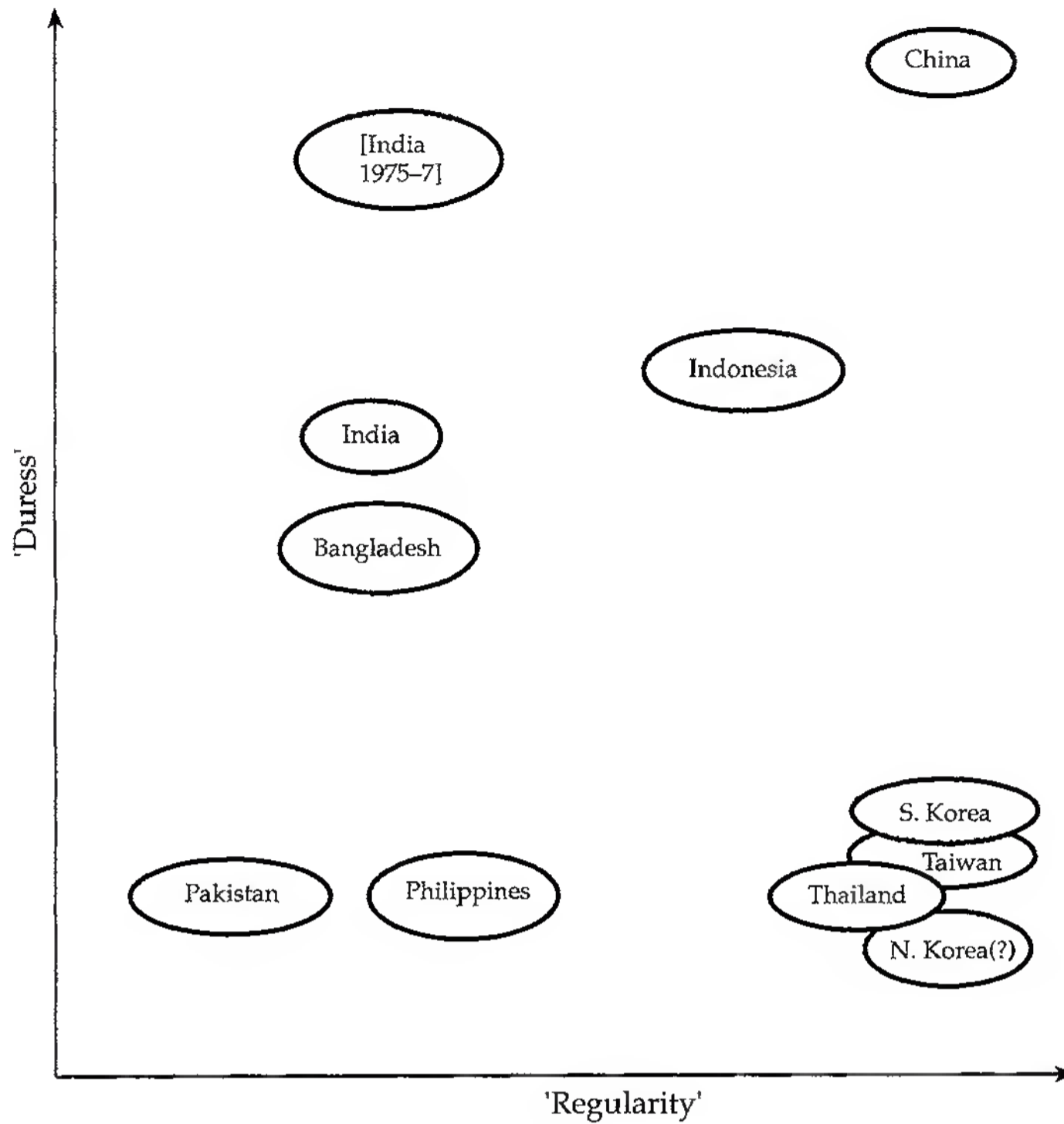


FIG. 16.1 State influences on fertility transition: regularity *v.* duress

land. North Korea could perhaps be put there also. Indonesia would be close behind. Most of the South Asian states, however, would lie comparatively close to the origin by this measure, as would the Philippines. Along the 'duress' axis, China would probably rank highest, at least at its recurrent peaks of antinatalist fervour and in the provinces most under Party authority. Emergency-era India might be comparable. Indonesia, India at more routine periods, and Bangladesh would be positioned somewhat further behind. Some other countries, including Thailand, Taiwan, the Koreas, the Philippines, and Pakistan, might score fairly low.

Given the conceptual imprecision of these two dimensions, formal measurement does not arise. The placing of countries in the quadrant is somewhat arbitrary—the more so given within-country complications of regional and temporal heterogeneity. (There is less arbitrariness, I would argue, in the country rankings along each dimension.) Fortunately, my heuristic purpose does not require precision. I am concerned with the qualitative extraction of what one might call principal factors of the Asian experience of fertility transition. In a popular understanding, the distinctiveness of Asian polities has much to do with social orderliness. Its perceived absence is the basis of the 'Singaporean critique' of ill-disciplined societies. What makes for it, according to Mahbubani (1994), is 'good

government', the ingredients of which are political stability, sound and meritocratic bureaucracy, equitable economic growth, fiscal prudence, and relative lack of corruption. Taking just the administrative content of this recipe, a substantial departure from the Singaporean standard of probity and meticulousness is possible without losing the putative effect of order and security on demographically relevant behaviour. The South Asian states, however, appear appreciably worse by this measure. But Asian states have also been exceptional in the significance they have accorded to the need for birth control—and here 'Asia' definitely includes South Asia. Political will on this score is evident, sometimes with but sometimes without administrative finesse.

The picture is not entirely one-sided. As Scott (1985), among other writers, has discussed, there is a long-standing tradition of peasant resistance to authority, taking the form not so much of open opposition but of *sub rosa* non-compliance. Even in China, a political setting least conducive to such resistance, Parish and Whyte (1978) have called attention to the process by which local cadres—typically drawn from and living in the community—are in part 'captured' from below, establishing a *modus vivendi* between the demands from above for policy enforcement and the requirements of a peaceful life. One can plausibly assume that some amount of analogous give and take existed in the demographic sphere, except perhaps during the 'high tides' of antinatalist radicalism. In more routine family planning programmes, opportunities for hidden non-compliance are manifold.

A NOTE ON TRANSFERABILITY

The embodiments of 'success' in present-day fertility transition are those East and South-East Asian countries where fertility is now at or below an average of three children per woman. These countries have some notable similarities in features widely seen as contributing to their striking economic performance. It is highly unlikely that their fertility trends, the subject of strong government interest and programmatic attention, have not been similarly affected by this political and administrative setting—in addition to whatever antinatalist effect can be attributed to improving economic conditions. Without comparably surging economies, South Asian countries (with a few conspicuous exceptions) also have much to report on the fertility front, although their elaborate and politically well-supported family planning programmes are tied into generally less effective administrative structures. Thus, it makes sense to speak of an Asian approach to dealing with high fertility. Indeed, such a view is implied in Caldwell's recent characterization of national family planning programmes as 'a manifestation—almost a cultural one—of the Asian arc from India through South-East Asia to China and South Korea' (Caldwell 1993: 304).

Mention of cultural peculiarities is potentially to complicate the matter. Confucianism, the perennial ghost in the East Asian machine, looms out of the explanatory apparatus; other spirits—Islamic variants of the Protestant ethic, for instance—follow. While not disparaging the contribution of culturalist analysis, I have tried above to keep the discussion fairly down-to-earth, with transferability problems in view.

What then are the lessons of the Asian fertility transition that are transferable to high fertility countries such as those of sub-Saharan Africa? Virtually every African population programme and every policy recommendation made to that region implies an answer. Most commonly, the answer entails duplication of the logistical nuts and bolts of family planning services: variety of methods, staffing of clinics, selection and training of extension workers, and so on. In addition, considerable if thinly supported faith is put on publicity and authoritative endorsement.

Oddly, the implied lessons in the Cairo Programme of Action do not much follow from any Asian experience—odd, because Asia contributes most of what experience exists on generating fertility decline. The evils of patriarchy and the virtues of reproductive rights are not self-evident in the Asian fertility experience, however salient they may be in a larger welfare assessment. The intellectual origins of Cairo lie elsewhere—in the traditions fostered by the Western enlightenment, which now flourish, at least on a rhetorical plane, in the greenhouse atmosphere of UN conferences.

The transferability issue is explored directly by Caldwell and Caldwell (1988), who point to a series of structural and attitudinal factors that prevent African governments from implementing 'the forceful family planning policies that have at times characterized the programs of China, India, and Indonesia' (p. 19). Among these factors are ones over which governments have little or no purchase (family structures, 'religious attitudes towards fertility'). I would speculate, however, that these may prove to be less a barrier to fertility transition than is often believed. A different factor mentioned is the nature of the African state. Purchase here may be said to be given by definition, but this nevertheless may turn out to be the more intractable obstacle. The exception proving such a rule is South Africa, which has experienced a one-third decline in the fertility of its black population over thirty years, and is identified by Caldwell (1994: 13) as having 'the only sub-Saharan national family planning programme comparable in intensity to those in Asia'.

My own conclusion is at least tangential to what I think is meant here. I have argued that the major part of the Asian experience in state-influenced fertility transition is captured by regularity and duress. While both qualities are potentially transferable, regularity is clearly the preferable path—more demanding, and perhaps not even saleable as policy in a programmatic age, but with benefits to offer far beyond the population sphere.

In his important study on the role of government in East Asian industrialization, Robert Wade (1990) gives a funny but telling description of the two schools of Taiwanese economists. On the one side there are the 'academics', American-trained in neoclassical orthodoxy, who occupy the university chairs and some senior but ceremonial posts in state agencies. They talk to the international agencies and organize conferences on Taiwan's economy for visiting American professors. They propagate the belief that the Taiwan economic miracle resulted from the release of market forces through pervasive deregulation. On the other side there are the 'editorialists', many of them trained on the mainland or in Japan, often in engineering. They actually manage the economy, guiding trade and investment and planning overall development strategy. They have no patience with free-market dogma.

One could plausibly sketch a quite analogous account of the governance of Asia's fertility transition. The engineers are the no-nonsense interior ministry officials, heads of local government, and family planning programme managers with targets to meet. The academics are the public relations officials and those responsible for liaison with the UNFPA, bilateral donor agencies, and NGOs. At times they may be one and the same person, simply exchanging hats.

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Politics, Culture and Fertility: *Transitions in Indonesia*

TERENCE H. HULL AND VALERIE J. HULL

Demographic transition theory must be modified on its fertility-side to include the role of government. In a broader sense, it can still remain a theory of social change and the diffusion of ideas . . .

Caldwell (1993: 311)

INTRODUCTION

In much of the discussion of demographic transition, and in the various theories of fertility change developed to explain the widespread reduction of family size, a contrast is made between the demographic impact of socio-economic change (which is sometimes characterized as 'autonomous') and planned government interventions. In the case of mortality, the influence of McKeown's work stressed the role of hygiene and nutrition, rather than the heroic interventions of doctors and clinics, as factors producing the greater survival chances and longer life expectancies of the last 150 years. Analysis of fertility transition likewise contrasts the role of mass attitude and behaviour change brought about through schooling, cultural change, or rising incomes with explanations emphasizing government-organized family planning programmes as determinants of smaller families.

In recent years, however, it is clear that stark contrasts are less helpful than detailed forensics in teasing out the relative roles of different factors underlying demographic behaviour. This is particularly the case when examining the role of government in the whole picture. Can government be relegated to a shorthand concept representing 'population control policy' or 'provider of supplies'? Can education, hygiene, and communication systems be imagined as developments independent of government policy and performance? In a world of modern nations, can the roles of citizen, spouse, parent, and sexual being even be defined without reference to the influences, regulations and actions of the State?

The challenge set by Caldwell in the quotation above is not merely to describe an abstract role for government in our understanding of fertility

decline, but also to set that role in the context of how changes in ideas and social interactions modify the linkages between individuals, families, and their government, with the result that women and men of a new generation make decisions about marriage and childbearing which produce smaller families on average, and larger proportions of people who avoid childbearing altogether.

In this paper we will explore the the politics and culture of fertility decline in Indonesia through an analysis of the role of government in the creation of institutions that have effectively promoted and provided contraceptives to married couples. Central to our thesis is the notion that a combination of a nationalist ideology committed to political stability and the effective use of instruments of social control were crucial in the implementation of a wide variety of popular government programmes including primary schooling, health service delivery, and family planning. At the same time, it is clear that this ideology was never committed to notions of individual, and especially women's, rights, and as a result the family planning 'successes' in Indonesia are not necessarily consonant with the definitions of success sought by those with other ideological assumptions, a subject much in the spotlight in the period surrounding the International Conference on Population and Development (ICPD, called the Cairo Conference in popular discussion). The Indonesian case points to the need for fertility theory to integrate not only a role for government, but also the dominant cultural and ideological systems which define the nature and exercise of power in society at all levels.

MARKING THE MILESTONES OF DEMOGRAPHIC TRANSITION

In 1969, four years after a bloody conflict which resulted in the total destruction of the Indonesian Communist Party and the ascendancy of a government forged in the partnership of the military and civilian technocrats, Indonesia adopted a policy of fertility control which stressed the demographic goal of reduced population growth as part of a broader strategy of economic development. 'Family planning' was translated into the Indonesian lexicon as '*keluarga berencana*', and over the next two decades became known throughout the archipelago as one of the government's key social welfare programmes, along with universal primary education and the promotion of the 'Green Revolution' of agricultural development. By the late 1980s President Suharto, already honoured in the country as the Father of Development, had garnered numerous international awards and recognitions for his role in promoting fertility control and raising food production. In the eyes of many international organizations, he had taken on the challenges of Malthusianism, and won. Fertility was falling rapidly, and poverty and hunger had been

reduced from a majority affliction to increasingly rare conditions in the world's fourth most populous country (T. H. Hull 1986; 1994).

The story of the Indonesian fertility transition is important as much for the contrast it makes with the experience of other countries as for the impact it has had on Indonesia's domestic and international reputation. While not as dramatic as Thailand's 'Fertility Revolution' (Knodel *et al.* 1987), it represents a large, sustained fertility decline initiated from a much poorer base. Even when accused of 'authoritarianism', the programme has never been seen to exercise the brutal coercive measures found in China, or the raw police power of India under the Emergency. Throughout its history, it has offered a fairly broad range of contraceptives, and has not had the 'single method' pattern of promotion typical of Vietnam, China, and even India. Perhaps most distinctive of all, over a quarter of a century the family planning programme and agency in Indonesia has never been the subject of the internal discord so frequent in the Philippines, Bangladesh, and India, or the focus of major international opprobrium like that directed at China. In a sense, the family planning programme has been typical of many Indonesian development actions: stable, steady, controlled, and relatively uncontroversial.

The Decline in Total Fertility

From the early 1970s, the focus of attention in the Indonesian Family Planning programme was directed to reducing the total fertility rate (TFR) by 50 per cent before the year 2000. In the course of the next two decades, the fertility rates fell in advance of targeted trends (T. H. Hull 1980; Hull and Hull 1984; T. H. Hull and Dasvarma 1988). The target was revised to aim for a halving of the TFR by 1995, but the 1994 Indonesian Demographic Health Survey (DHS) made it clear that even this optimistic objective had been achieved ahead of schedule, with a national rate of 2.86 recorded for the 1991–4 period (see Fig. 17.1), on a trend implying a lower rate of 2.6 or 2.7 for 1994.

Domestic discussions of the fertility decline have now turned to focus specifically on the achievement of replacement-level fertility, defined as consistent with a TFR of 2.2 or 2.3. The 1994 DHS recorded fertility levels below replacement levels in four provinces, with TFRs of 1.8 for Yogyakarta, 1.9 for Jakarta, 2.1 for Bali, and 2.2 for East Java. The other two provinces of the islands of Java had substantially higher rates: 3.2 in West Java and 2.8 in Central Java. Outside the central Java–Bali islands most provinces displayed rates between 2.8 and 3.6, with the exception of South and Central Kalimantan, which approached replacement at 2.3, and East Timor and East Nusatenggara, which topped the rates with 4.7 and 3.9 respectively.

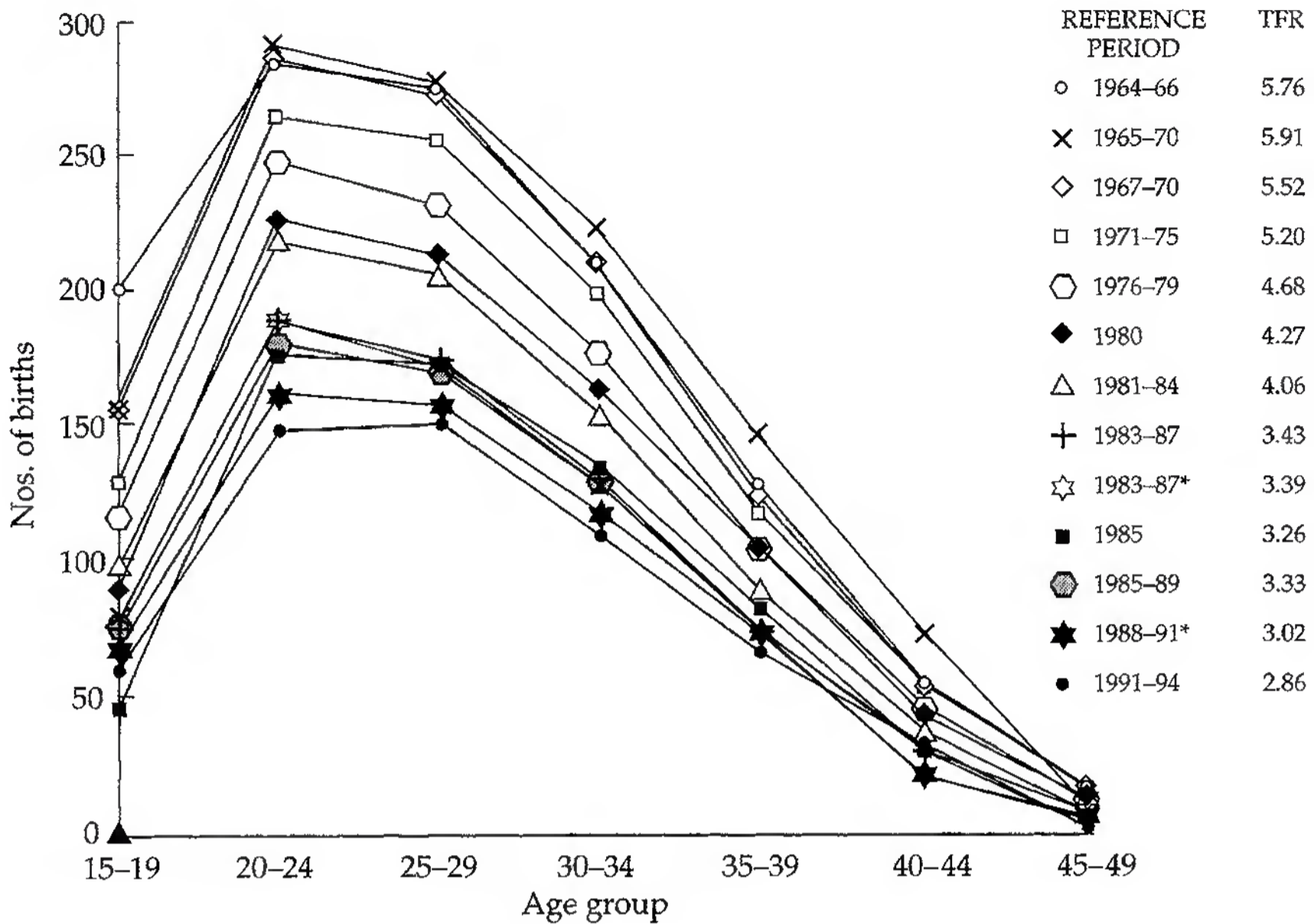


FIG. 17.1 Age-specific fertility rates, Indonesia, 1964-1994: estimated average numbers of births per 1,000 women of various age groups

Recent discussions on family planning performance have tended to focus quite specifically on achievement of replacement-level fertility, with senior officials urging provinces with TFRs greater than 2.5 to 'work much harder'. The ICPD has reinforced the warning of many commentators that there are dangers in linking demographic indicators such as TFR, which are the result of a wide range of behaviour and influences, too closely to performance of family planning workers. However, the Indonesian Law on Population has codified the mission of the family planning movement as changing norms, delaying marriage, and improving family welfare as well as promoting the use of contraception. The programme thus sees demographic impact as an appropriate and direct measure of its performance in these broad areas, in contrast to more narrowly defined family planning service delivery systems.

The decline in total fertility by more than 50 per cent and the falling rate across all age groups as shown in Fig. 17.1 seems to indicate that the fertility transition is indeed 'on course', or at least on the course set by the government and international donors in the early 1970s. The continuing decline is itself a justification for the government programme to continue to concentrate on demographic impact (rather than on consumer satisfaction or individual health and welfare) as a measure of programme performance.

There have been several studies looking at components of Indonesia's fertility transition which acknowledge the supporting role played by changing marriage patterns (see Hull and Hull 1987; Jones 1994); however, most agree that the family planning programme has played the starring role in the transition to lower fertility (McNicoll and Singarimbun 1983; Warwick 1986; Hugo *et al.* 1987; T. H. Hull 1987; Adioetomo *et al.* 1990; Adioetomo 1993; Gertler and Molyneaux 1994; Freedman 1995). Even Gertler and Molyneaux's detailed quantitative model results, which stressed the dominance of socio-economic factors over programme factors, acknowledged not only the programme's important supply function but its 'complex political incentive system' as crucial contributors to the transition (Gertler and Molyneaux 1994: 60).

The questions that arise at this point have to do with the *nature* more than the *trend* of fertility transition. Was this a purely 'engineered' transition, or is it based on a foundation of changing individual preferences? If engineered, what were the important mechanisms used to induce change, and to what degree were they acting on the demand versus the supply side of the fertility equation? If government pressures were important in initiating the change, does the move to user fees and 'self-sufficiency' (KB Mandiri) and the broadening Family Welfare (Keluarga Sejahtera) movement require a shift to a more voluntaristic and individualistic approach? Are the changes in the Indonesian family sustainable? Finally, even if the fertility transition is deemed to be on course, what does this imply about the broader reproductive health goals adopted in the 1994 ICPD in Cairo?

The Contraceptive Revolution

Over the course of the twentieth century, the methods of birth control available in Indonesia, as in the rest of the world, changed dramatically, and the legal and cultural attitudes towards contraception and abortion were in a state of flux. While in the first half of the century strong state and religious opposition to fertility control was the norm, and small groups of middle and upper-class activists campaigned for birth control on the grounds of women's health needs, by the 1950s medical professionals and some outspoken government officials had begun to promote the ideas and techniques of modern birth control in urban areas of the newly independent nation. Nevertheless, it is likely that fewer than 5 per cent of women were using some form of modern birth control before 1968. Traditional means of birth-spacing and limitation, including prolonged breastfeeding and postpartum abstinence as well as herbal preparations, massage, and abortifacients, were the main mechanisms that kept Indonesian marital fertility well below the biological maximum.

TABLE 17.1 Reported Current Use of Methods of Birth Control, Indonesia, 1976–1994^a

	% of currently married women aged 15–49				
	1976	1987	1991	1993 ^b	1994
<i>Official programme methods</i>	17.2	40.7	43.7	48.6	48.4
IUD	4.1	13.2	13.3	12.0	10.3
Pill	11.6	16.1	14.8	17.5	17.1
Injectables	—	9.4	11.7	15.5	15.2
Implants	—	0.4	3.1	3.0	4.9
Condoms	1.5	1.6	0.8	0.6	0.9
<i>Programme-promoted but non-official methods</i>					
Female sterilization	0.1	3.3	3.3	3.0	3.8
Male sterilization	0.1	3.1	2.7	2.3	3.1
0.0	0.2	0.6	0.7	0.7	0.7
<i>Widely available but programme-discouraged methods</i>					
Medical abortion	—	—	—	—	—
<i>Traditional and folkloric methods</i>					
Rhythm	1.0	6.0	2.7	1.4 ^c	2.7
Withdrawal	0.8	1.2	1.1	—	1.1
Traditional (herbs or massage)	0.1	1.3	0.7	—	0.8
Other methods	0.1	2.3	0.8	—	0.6
Illegal abortion	—	1.2	0.1	—	0.2
—	—	—	—	—	—
<i>Reported use of any method</i>	18.3	49.8	49.7	53.1	54.7
<i>No method</i>	81.7	52.3	50.3	46.9	45.3

^a A dash indicates that data are not available in the particular surveys reviewed to compile this table.

^b Data from the large scale SUSENAS Social and Economic Survey conducted annually by the Central Bureau of Statistics.

^c Includes categories of 'Other methods' and 'Traditional methods'.

Source: 1976 SUPAS, 1987 CPS, 1991 and 1994 IDHS, and 1993 SUSENAS, all tabulated and published by the Central Bureau of Statistics.

The new contraceptive technologies introduced in the period 1970–85 enabled the family planning programme to encourage three-quarters of women of reproductive age to try contraceptives. At present about half of currently married Indonesian women are estimated to be using modern forms of family planning. As Table 17.1 documents, the biggest change was in the use of programme-promoted methods up to the late 1980s. Since that time the adoption of modern methods has been gradual and use levels have essentially plateaued. Service statistics published by the

BKKBN indicate that in fact there was a decline in the total number of new acceptors in 1990 and again in 1992 and 1993, though the percentage reported in surveys to be currently using contraception rose slightly over the early 1990s, and in absolute terms this still represents a huge user group of over 20 million (mostly women) clients.

The table also helps to introduce some of the 'political' and 'cultural' issues which determine much of the form of the programme. For instance, while the programme subsidizes sterilization operations, it is politically unable to recognize them as 'official' methods because of a lack of consensus support by religious leaders. Similarly, the programme resolutely rejects abortion on grounds of cultural and religious non-acceptability, though the resort to abortion, both traditional and modern methods, is probably widespread (T. H. Hull *et al.* 1993). Limitations in access to sterilization and abortion aside, the substantial programme effort made in Indonesia is world-famous—well documented in composite indices produced by experts (Entwistle 1989; Mauldin and Ross 1991) and obvious to even the most casual observer travelling through the Indonesian archipelago.

THE FERTILITY TRANSITION IN THE POLITICAL CULTURE OF INDONESIA

Framework for Analysis of the Political Culture of Indonesian Fertility

In an earlier paper, Terence Hull (1987) proposed a framework to assist in the analysis of the political and economic setting of institutions shaping fertility behaviour.¹ The framework directed attention behind the proximate determinants to consider how a wide variety of social and economic institutions come to change the setting for fertility-related behaviour. The institutions regarded as having the most direct influence on the proximate determinants were those that directly modified individual proximate behaviour, such as the institutions of marriage and courtship, and the economic institutions shaping household and labour-force behaviour, and those that directly facilitated fertility control, generally through health and family planning activities.

In the earlier paper it was argued that the institutions of governance and socialization could be seen as determinants of the family, economic, and health institutions. In turn, governance and socialization processes are to a large degree shaped by a broad set of ideas and beliefs which are contained in ideologies that include both the official, formal expressions of national identity and purpose and various stated and unstated alternative beliefs which constitute the way a people see themselves in relation to each other and the State.

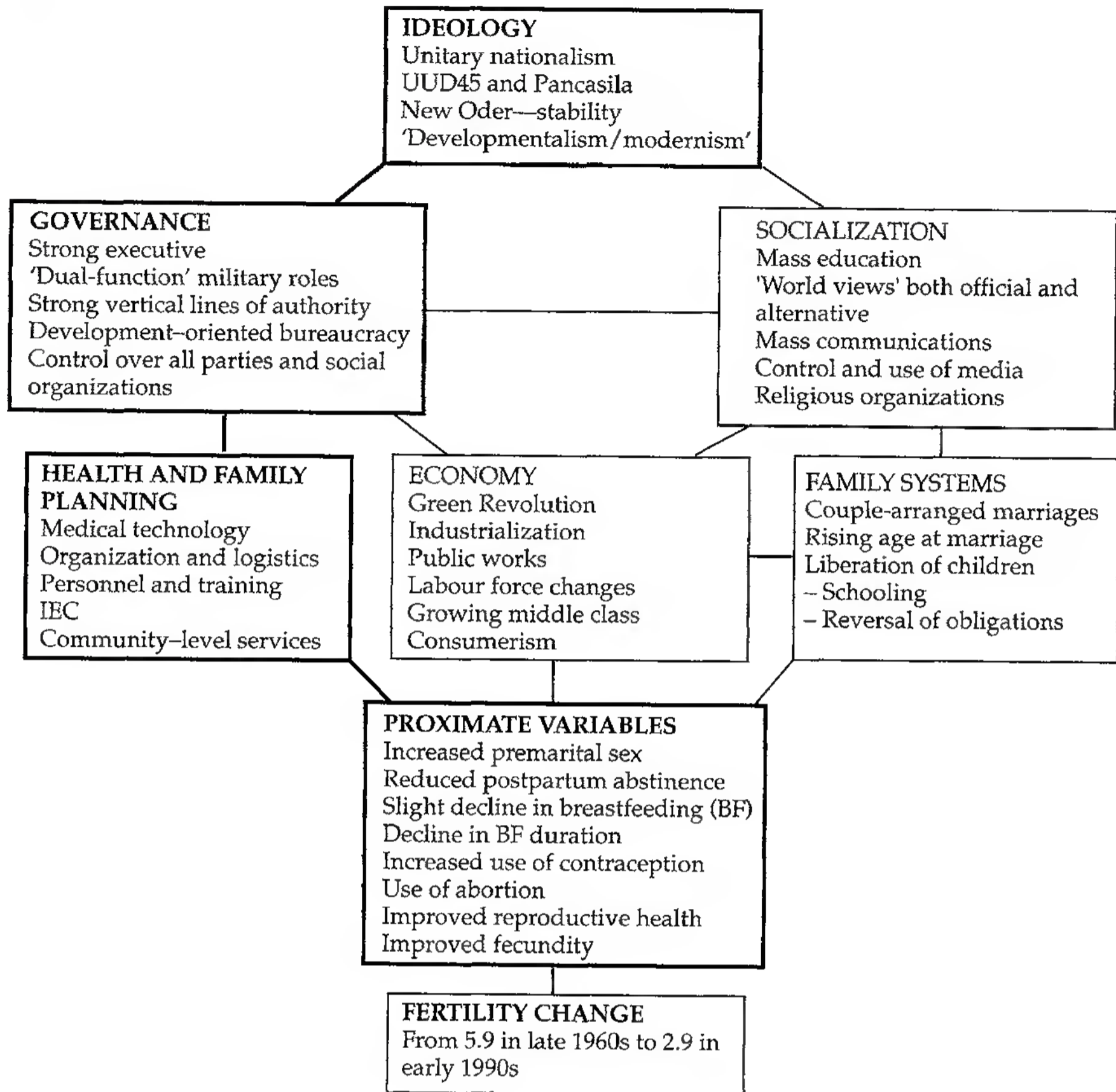


FIG. 17.2 Conceptual framework for studying the role of government in the Indonesian family planning programme

Source: adapted from T. H. Hull (1987).

The present paper focuses on the way politics and culture affected fertility in Indonesia since the 1970s. In terms of the framework (Fig. 17.2), the main evidence to be reviewed is linked in the crescent of bold outlined boxes on the left: ideology shaping institutions of governance, of which the family planning and health institutions can be seen as a subset, through which major changes have been wrought in behaviour related to contraceptive use. In a very general sense, the diagram can be seen as representing aspects of fertility transition theory, focusing on adaptation theory and socio-economic change on its right side, and innovation-diffusion aspects of a programme perspective on the left. On the right, the expansion of education and the changing labour roles of women are linked to the evolution of new forms of family relationships, and to attendant motivations for smaller families. On the left, government commitments to provide health

and contraception services facilitate changes in individual fertility-control behaviour. But both the 'socio-economic' and the 'family planning programme' wings of change are rooted in the ideological foundations of the society, and respond to the cultural and political struggles to define and defend aspects of those ideologies.

Pancasila and the New Order: Key Elements of Ideology

We . . . are obliged to submit to (*tundak*) and obey (*patuh*) all the regulations that emanate from the legitimate government. We are convinced that the purpose of the Government with all its regulations is to improve the life of its nationals.

Mulder (1994: 62), quoting the Pancasila Morality Training manual used in schools, PMP II: 95–6

The New Order government of President Suharto came to power with a dedication to stability and harmony which has characterized much of government activity over a quarter of a century. The key element enforcing stability is the overt commitment of the armed forces to play a dual role (*dwi-fungsi*) in the military and civilian realms as a 'stabilizer' and 'mobilizer'. Military officers are frequently appointed to leadership positions in the civilian bureaucracy, and civilian bureaucrats are given military and ideological training as a condition for promotion.

This strong linkage between the armed forces and the government in Indonesia differs from a classic militaristic state, because the nature of hierarchical relations in Indonesian society—even in the military—is characterized by 'familial' (*azas kekeluargaan*) structures, with the *bapak* (father) having the role of the patron-leader of a family collectivity, and the *anak buah* (followers/children) having obligations to follow his benign leadership. This key element of authority in Indonesian society is the basis of the term 'patrimonialism', but is not exercised in a wholly male dominant way. As Suryakusuma (1991: 51) points out, while *bapakism* may have formal power, *ibuism* or the female counterpart is both a medium for the exercise of that power and the major force of control of informal power, as described in the family-based rhetoric of the ideology.

Another tendency which limits the military role is the respect given to traditional authority structures: aristocrats (in Javanese terms, the *priyayi*), intellectuals, religious leaders, and the *nouveau riche* elite, as well as a variety of egalitarian, but essentially traditional and religious, values. Balance is not necessarily sought between countervailing powers represented by individuals dedicated to conflicting positions; rather, the argument is made that all citizens must share the same broad set of values (Pancasila²), and seek balance in terms of emphases given to different aspects of the value structure. At least in formal discourse, all Indonesians are expected to support the ideas of a unitary state, Pancasila socialism, and familial

economic institutions (co-operatives and state enterprises) as the foundation of the economy, and to condemn communism and 'liberalism' as un-Indonesian.

Perhaps the most dramatic achievement of the New Order government in the period 1966–90 was the major reconstruction of state and civil institutional structures in ways that enhanced central government control while promoting decentralized responsibilities. The executive branch of government is dominant, having responsibility for the framing of the budget, the design and implementation of policies and programmes, and the conduct of all foreign affairs and economic regulation. The president, who is elected by the People's Consultative Assembly every five years, is head of state, commander in chief and quintessential *bapak* of the nation. The executive also drafts laws which are then submitted to parliament for discussion and ratification.

The minister for home affairs is responsible for the structure of regional and local governments, through provincial governors, district and subdistrict heads, and village chiefs, and in conjunction with the army and police apparatus implements all the activities designed to ensure security and order. Development activities are also co-ordinated through interior ministry institutions, down to the village advisory council, and these have been constructed to mobilize the involvement of the wives of government officials in 'voluntary' development activities. (See below for description of the PKK women's group.)

The institutions of governance can be thought of as *pyramids within pyramids*. At the peak of each pyramid is the *Bapak*, who commands respect and loyalty from his underlings. The fact that underlings are themselves *Bapak* within their own spheres of organizations means that they expect respect from below, just as they give it to superiors. The exercise of top-down power is moderated by the realization that a superior generally should not undermine the power of underlings by seriously reprimanding or embarrassing them in front of others, since that would also undermine the credibility of the superior as a 'leader by example'. At the same time, an underling who steps out of line in a moral or social sense could expect a private lecture from a superior, who in this case would be playing the appropriate 'father role' in the organization. Such paternal authority can extend beyond work responsibilities to private life as well.³

In the ideological training that all officials are given through the P4 programme, and that all children receive in Pancasila Morality Training classes in school, emphasis is placed on the moral dimensions of relationships in hierarchies more than on functional aspects of relations (see introductory epigraph). The language used is often Javanese, or Indonesian translations of specifically Javanese concepts, though the idea is promoted that these are traditional Indonesian concepts and values. This is sometimes the source of resentment in a multi-ethnic society, and raises questions

about the long-term sustainability of development programmes, including family planning, which have been heavily reliant on this ideological base.

From the viewpoint of social programmes, the important aspect of the government structure is that the pyramids within pyramids are nested hierarchies (or *cones*) of respect and compliance. In practice, this means that it is important for any government programme to mobilize the whole structure by ensuring that the interlocking horizontal layers of *Bapak* give their support. This is not just a matter of an 'order' being sent down the line, because at each level a *Bapak* could modify or misdirect the message. Instead, 'orders' must be developed carefully and promoted strongly to build support and compliance. The cones-of-authority image is also important in planning, analysing, implementing, and evaluating programmes. Models of reporting and feedback built in terms of complex 'rational' goal-oriented bureaucracies do not always translate accurately into systems of cones of pyramids within pyramids. If bad reports are seen as 'insults' to the upper levels, then they are likely to be modified to ensure that the reports reflect the *Bapak's* expectations irrespective of realities on the ground. This pattern of reporting to please superiors is famous in Indonesia, where the acronym ABS—Asal Bapak Senang, roughly As Long as the Boss is Happy—is commonplace.

Training courses often teach officials to monitor their projects according to a classic 'evaluation cycle' starting from assessing the current situation, identifying problems, and designing reforms or innovations which are to be implemented in the programme and continually evaluated. In the Indonesian bureaucracy this cycle faces two major problems relating to the need to avoid shaming a superior by either directly criticizing his actions or activities, or indirectly criticizing something with which he is personally identified by suggesting that it needs to be reformed. As such, the evaluation cycle develops a '*malu* [shame] loop', with results overtly producing praise and confirmation of an activity, while covertly and in subtle ways producing a 'critique' (often unwritten), which is then the basis for proposals to 'extend, enhance and develop' the programme.⁴ Of course the urge to defend, justify, and protect projects and procedures is present in every bureaucracy, and is not uniquely Indonesian—as Parkinson's various laws attest. But it does seem clear that the political culture of Indonesia is more deeply, sensitively, and systematically averse to direct criticism than, for example, South Asian or European cultures.

Cones of authority also mean that reform and improvement are not necessarily easy. In all areas of social and health policy, foreign consultants call for the establishment of standards of procedure (SOP), manuals and technical training to improve programmes and services. The hundreds of manuals written as part of health and family planning development assistance projects are seldom found in the offices, clinics, or hospitals of the nation. Part of the explanation for this omission,

frequently heard, is that Indonesia is an 'oral culture', but underlying this is the fact that written instructions challenge the power and authority of leaders at each level of the hierarchy. By promoting a technical 'meta-authority', programmes are implicitly undermining the individual links of moral authority in the established cones of authority. In a conflict of interests between the technical and the moral authority, it is most often the moral authority that will win, though the individuals in power may decide to express their moral authority by advocating adherence to some key aspects of the technical reform. The problem is that the hierarchies of moral authority have difficulty adopting, implementing, and constantly evaluating complex packages of technical instructions. In a very real sense, the most important 'manual' for them is unwritten.

Thus it is that the institutions of governance in New Order Indonesia have been very successful in maintaining order and stability, and strengthening the 'moral hierarchy' of civilian and military rule, but at the same time face difficulties in implementing viable taxation or registration systems, or wiping out complex webs of corruption at various levels of government. In health and family planning, basic problems of technical standards, leakage of supplies, and abuse of the fee system persist, and efforts to implement quality assurance programmes (adherence to the written manuals) face monumental challenges. Laws, regulations, strategies, and plans are only as strong as the hierarchies that support them—and are weak wherever one node of the hierarchy finds it preferable and feasible to ignore or change an instruction.⁵

In Fig. 17.2 the box containing Health and Family Planning institutions, at the third level, is thus shaped in important ways by the institutions of governance. The inclusion of private-sector institutions, human resources, and technologies is not meant to imply that these are owned by, or even necessarily controlled by, the government. Rather, the government provides the institutional setting within which such technical, service provision, and knowledge-creating institutions must work.

*An Overview of the Institutions of Governance
and Family Planning in Indonesia*

Who are the spirits in a Javanese village today? The police and army commanders, the village chief and the Moslem teacher. Get them on our side and we've won the battle

BKKBN provincial head, quoted in *The Economist*
(25 November 1978: 74)

Organization of the family planning programme involves a powerful bureaucracy—the National Family Planning Co-ordinating Board or BKKBN with a direct line to the national executive and a hierarchy of loyal workers, as well as the enlistment of other hierarchies to actually implement the

objectives of the programme: the departments of health, internal affairs, information, defence, religion, education and culture, and others. But in addition to policy-making and co-ordination of these other departments, the BKKBN relies heavily on the local political apparatus—village and district officials and bureaucratic and quasi-government officials, who maintain the level of pressure necessary to legitimize family planning:

When a Governor is approaching the end of his five-year term of office and wants a second term, his achievements are evaluated by a national team, who scrutinize family planning in particular. If the province has a poor record in family planning, the doors are generally closed to a new appointment for the governor. (Selo Soemardjan and Breazeale 1993: 65)

The military, too, have been heavily involved in programme efforts as part of their dual role. They provide facilities and personnel, particularly during mass mobilization efforts; they also lend the programme legitimacy and, in the description of some critics of the programme, a form of intimidation including recruitment at gunpoint (Hafidz *et al.* 1991). The picture portrayed by a family planning fieldwork to Hanhart (1993: 40) is probably a more accurate description of the military involvement in promoting the programme: 'If the target is still high and has not yet been reached, and the people are difficult to reach, the army makes them a little bit afraid so that they are willing to come together for a family planning session.'

The elaboration of government organization is possible through the utilization and mobilization of responsive community structures, many of which were created or greatly strengthened by the New Order government as described above. Although this has been promoted as 'community participation', it is very different from the bottom-up community-based development advocated at Alma Ata for primary health care, or by non-government agencies for a range of other development programmes.

The non-government agencies that have been recruited to work with the government programme in Indonesia have necessarily been specialized groups and quasi-government NGOs rather than grass-roots organizations. The Indonesian legal system contains many provisions which discourage autonomous popular organizations, and critical or opposition forces are quickly curbed or eradicated by a vigilant bureaucracy. As a result, there are few NGOs in Indonesia with the popular support to provide the alternative voices found in NGOs in the Philippines, Thailand, or India. Instead, the most influential NGOs tend to be elite-based. Among the prominent organizations strategically incorporated into the programme are the professional associations, such as those for doctors, midwives, and pharmacists. Large and medium-scale businesses have also been persuaded to participate in credit and income-generating programmes and insurance schemes, and often sponsor programme activities and propaganda.

Perhaps the best examples of the 'top-down' community organizations in family planning in Indonesia are the compulsory, and hence ubiquitous, women's organizations of Dharma Wanita (wives of civil servants) and the PKK (Family Welfare Movement). Suryakusuma (1991: 50) describes the two as systems whereby 'Elite women are entrusted without compensation or remuneration, with running programmes for women from the lower urban and rural classes . . . for the development interests of the state.' The PKK members serve as cadres for the operation of the monthly village integrated health and family planning services post (POSYANDU) and are active at other times of the month organizing activities designed to motivate women to adopt and use contraceptives. By definition, the hierarchy of authority for Dharma Wanita and PKK mirrors the government bureaucracy; i.e. the wives of successive levels of the bureaucracy are automatically the office-holders of the women's organization at corresponding levels, thus facilitating horizontal and vertical co-operation, but preventing meritocratic advancement and inhibiting critical assessment or innovation. From a very practical standpoint, the government in general and the BKKBN in particular can rightly point out that, without such systematic mobilization, neither supplies nor the normative family planning message would have permeated virtually every village as they have today.

*Nature of 'Patrimonialism' and Authoritarianism—The State
and the Nation as 'Family'*

If our goal was to try to alter people's attitudes on a topic as culturally central as family size, and to use existing cultural patterns while doing so, what did this imply for policies and strategies? . . . two existing cultural traits were on our side: cooperation and paternalism.

Suyono (1993b: 5–6)

The most potent force in every village is neither government fist nor religious belief; rather it is fear of the neighbours' censure or 'what will people say?' So family planning was plugged into existing social networks and local leaders were given responsibility for spreading it. The traditional Javanese hierarchical structure and the social pressure it brings to bear did the rest.

Economist (1978)

The terms 'patrimonialism' and 'paternalism' have a common root which emphasizes the essential male core of authority, and links the exercise of authority to the father figure of the institution of the family. Calls for the institutions of health and family planning to be more under the control of women give rise to confusion in a patrimonial system where all power is regarded as rightfully and benignly being the province of a leadership that is 'naturally' male.

If women are not prominent in the leadership of the family planning programme, it does not imply that they either resent or oppose the power of the male leadership. The constant stress on harmony and co-operation is reflected in the way women respond to male leaders calling on them to accept family planning. As Minister Haryono Suyono argues:

In Indonesia, we find that a leader's views carry considerable weight, even in an area where the leader may have little or no expertise . . . The leader, in such a situation, is not forcing people to follow, but the clients feel better, are more 'satisfied', if they follow a local person whom they respect. (Suyono 1994a: 26-7)

To some outsiders this may seem surprising,⁶ but in the context of systems of government organization and ideology which are so totally committed to patrimonial ideas based on moral rather than functional bases of authority, the acceptance of community leaders' advice on family planning matters seems quite natural. Of course, there are some communities where open opposition to family planning is expressed and many where acceptance is mere grudging acquiescence, but the programme is probably justified in characterizing these as exceptions to a general rule (some would say a Javanese rule), and in claiming that in any case even 'mere grudging acquiescence' is acceptable as a first step to more internalized acceptance.

This is captured in the acronym PAK to describe the sequence of the Indonesian family planning programme approach. In the 1970s family planning programmes in the West promoted KAP surveys, to show the link between people's *knowledge* of contraception, and their *attitude* towards its use, as a way of understanding their personal contraceptive *practice*. In Indonesia the technique is reversed, with the government seeking to change *practice*, which then leads to favourable *attitudes*, followed only gradually by the acquisition of facts or *knowledge*. *Pak*, in common Indonesian parlance, is the abbreviation for the term *bapak* (father), and the most potent symbol of patrimonial power.

In her overall sympathetic account of Indonesian-style community participation in primary health care, Koesoebjono-Sarwono (1993: 181) discusses the fact that health post activities are regarded by health workers as tasks that must be performed once a month regardless of the consumers' desire to participate. 'The regularity of the action . . . is more important than the actual understanding of the purpose.' This is widely known in Indonesia as 'form over substance'. Koesoebjono-Sarwono, like others before her (Johnston 1982; Berman 1989), questions the ultimate sustainability of such an approach; however, the rationale generally given is that routine practice will eventually lead to fundamental changes in attitude and knowledge, i.e. that PAK will prevail.

The pervasiveness of the authoritarian culture acts in many other ways, far beyond its influence at the village level, to reinforce the government

family planning programme. Across all levels of the bureaucracy, *Bapakism* is absolute, reflecting the moral authority described above and reinforced in the family planning bureaucracy by the direct line of authority between the BKKBN chairman (and minister for population) and the president. The media and communications systems also reflect the strong controls which constrain both critique and criticism of government programmes and promote the ideas and speeches of the leaders.

More subtly, but none the less important, authoritarianism is also evident in the operations and activities of the academic and research community. With few exceptions, the public education system—from primary to tertiary level—systematically discourages critical questioning or innovative thinking. Moreover, there is a type of ‘self-censorship’ which limits the nature of research about government development programmes, including family planning, and which, in a manifestation of the *malu* loop, affects the interpretation and presentation of any critical results. Researchers who may break from this mould also find that there are more formal means of control of research which discourage criticism. Findings that show less than ‘optimal’ results are either literally shelved or ignored in other ways if the proposed solutions either undermine the established credibility of the programme or imply a shift of power towards an institutional rival or away from an institutional client. Individuals and institutions involved in research that does not conform to the system can find their access to research funds curtailed.

Safaris, Targets, Coercion: Matters of Perception and Misperception

Is it true that target figures are the only measure of real success? Is it true that if the total targetted is reached, the quality aspect is also guaranteed? In the Family Planning Programme . . . ‘spiral’ [IUDs] must all be used by the end of the year as proof that programme implementation is a success, that the total number of acceptors is on target. Women are rounded up and forced to accept IUDs. One can imagine the psychological effect of such action, which can damage not only the FP programme, but the government’s ‘image’.

Kompas (19 February 1976)

The carrying out of family planning safaris in the field clearly takes on the characteristics of hunting expeditions with all the associated terrifying aspects.

Tohari (1983)

In most foreign and Indonesian accounts alike, the way the Indonesian family planning programme works at the community level is described in a positive light, stressing its overall cultural acceptability and its ability to get results through its particular brand of ‘community participation’.

The current minister points out that planned social change requires the mobilization of social pressures:

... avoidance of coercion does not mean value neutrality. Any population programme, in order to be successful, must have objectives it is trying to achieve. It must promote the achievement of those objectives, even where—as is often the case—they require change in fundamental attitudes and values. To do so, it relies on social change mechanisms which, at times, may appear to comprise a fairly 'hard sell'. (Suyono 1993c: 5)

In family planning this 'hard sell' approach has been characterized as 'a conquer-by-culture campaign' in which 'shame is the best contraceptive' (Economist 1978: 75), and where 'not participating in family planning is thought to be "sick" and can be considered "straying" or "deviant" behaviour in society' (Suyono 1994b: 20). Critics have pointed out the kind of institutionalized abuse of power which can result (Kennedy 1994). As illustrated in the introductory quotations, two mechanisms strongly identified with the Indonesian Family Planning Programme have come under particular criticism, both nationally and internationally: the target system, and safaris.

To organize and motivate the bureaucracy, family planning goals were translated into numeric targets, including for specific methods. Quantitative targets at virtually all levels of the programme have been a long-standing feature, though they have evolved over the years both at the central level, where computer simulations related to demographic impact have allowed more complex target-setting, and at the field level, where zealous officials have instituted sometimes unachievable targets in an effort to prove their loyalty and to discipline their staff.

Similarly, safaris, or mass mobilization by the army or civilian groups, were instituted as a way to achieve higher levels of contraceptive acceptance through concentrated efforts. They have been defined as 'a social and cultural institution in Indonesia which builds on the knowledge that individuals are influenced by, and confident in, activities that are done in connection with peer groups' (Ward *et al.* 1990). The name and approach used by safaris have varied over time and place, from the internationally famous Gugur Gunung, or special drives of East Java in the early days of the programme, to Safari Spiral (IUD Safari) of West Java, and the widespread Safari Senyum (the 'Smile Safari', with the Indonesian word for smile being an acronym for *Sungguh Enak dan Nyaman untuk Masyarakat*, or 'Really Nice and Pleasant for the People').

Not everyone thought that tactics such as targets and safaris were culturally acceptable, as the introductory quotes attest (or considering the criticisms summarized in Chauls 1994). From the early days of the programme to the very recent period, there have been occasional critical local press reports, but these have been balanced by much favourable press,

including high-profile participation by President Suharto opening safaris and presenting awards to family planning acceptors. The endorsement by the President has been crucial for dampening criticism. The BKKBN has always stressed that reported cases of coercion were the result of over-zealous local officials, and that the BKKBN itself can disclaim responsibility because its function is to co-ordinate, not to implement (see also T. H. Hull 1991).

At a central level, the government has been responsive to criticism of both safaris and targets. In part because of pressures from professional associations and the Health Department, safaris outside of the clinic setting are no longer officially permitted, and central-level policy-makers claim tenaciously that 'safaris no longer exist'. It is clear, however, that mass mobilizations by other appellations, including those outside health facilities, continue. Manunggal ABRI are nationwide three-month special drives (July–September) marking the anniversary of the armed forces when the military lends its support and facilities to family planning recruitment drives; Operasi Laju Bahtera is the name for regular mass programmes used in Jakarta. A recent report on contraceptive implants (Fisher *et al.* 1995) showed that nearly 40 per cent of new acceptors in the 1994–5 financial year were recruited during the two months of the year when the Manunggal ABRI activities were at their peak.⁷ Moreover, people in the community, as well as Health Department staff and local officials, continue to refer to these mass operations as 'safaris' (Bazuki 1995; Sarwono *et al.* 1995).

In 1993 it was announced that the programme would abandon numeric targets. The new quantitative programme indicator is 'Demand Fulfilment' or Pemenuhan Permintaan Masyarakat (PPM). Although this is referred to as responding to 'expressed needs' (Suyono 1994a), the estimates of demand are still determined by the programme rather than by clients. Provincial leaders are given draft annual figures which are then subject to bargaining at the central level to ensure that they are administratively feasible, but will still produce the desired demographic impact. Monthly feedback statistics still track percentage fulfilment of PPM, and exhort programme managers to do better if they fall below projections. At the field level, moreover, the potential for the excesses of local officials to meet the targets—for they are still referred to as 'targets' at this level—remains.

As in all large bureaucracies, there is thus a gap between new policies stated centrally, and field-level implementation. A sympathetic interpretation of this lack of change is that it simply takes time to turn a huge bureaucratic battleship around, particularly to redirect the course of long-entrenched policies and practices such as targets and safaris, throughout the embedded cones of authority. More fundamentally, however, the message itself is muted. In Indonesian culture it must be so,

for announcement of the abolition of such a basic component of the programme must be made without 'losing face' or implying past mistakes, again a reflection of the working of the '*malu* loop'. Moreover, there are undoubtedly real fears that lifting numeric goals (whether called targets or PPM) too soon would unravel the system completely. The substitution of 'demand fulfilment figures' for targets at the central level introduces a subtle semantic change which may eventually evolve into more genuine measures of demand fulfilment; but for the time being the announcement of 'the end of targets' has served more as a response to international critics than as a major shift in the programme itself.

There are other aspects of the social pressure associated with the programme which have also been criticized. Reports regularly surface of local authorities demanding a family planning acceptor card as a prerequisite for children's admission into school, for obtaining a child's graduation certificate or a citizen's identity card, and for access to immunization and other services. Not national policies, these are examples of the innovations of officials within the lower 'cones of authority', eager to achieve their targets and recognition.

CONTRADICTIONS, CONTRASTS, AND CHALLENGES ON THE HORIZON

Its underlying ideology is not only what makes the family planning programme uniquely Indonesian: it also helps to explain how it works and why it does much more than simply provide contraceptive information and supplies. Nevertheless, ideology is by nature an abstraction which allows some latitude in translation from policy rhetoric to implementation of programmes. Geographic variations, social change over time, and other contrasts and contradictions are salient because of what they tell us about how the ideal system varies, and where changes of direction might occur in the future. The fact that the number of new acceptors declined in the early 1990s, and that contraceptive prevalence rose at only a moderate pace, may signal challenges on the horizon. Although the fertility decline seems 'on course', some are beginning to question whether it will continue to be so.

Unity in Diversity?

The image of the acclaimed stability of Indonesian society as having 'ethnic and religious fault lines' (Vatikiotis 1994: 219) is an apt one, falling down only in its omission of social class as a further potential source of instability.

Ethnic diversity

In this archipelago of 300 ethnic groups spread across over 6,000 islands, levels of contraceptive use (as recorded in the 1994 DHS) range from highs of around 70 per cent in North Sulawesi and Yogyakarta to a low of 23 per cent in East Timor. Variations in total fertility are similar: a range of 4.7 in East Timor to 1.8 in Yogyakarta. The method mix used by acceptors has a similarly variegated pattern, with over 40 per cent of Balinese women using the IUD, while in nine other provinces the figure is 5 per cent or less.

In terms of programme approach, commentators on the Indonesian programme have since its early days (T. H. Hull *et al.* 1977) questioned the replicability of the models used in Java and/or Bali to other island groups. The programme prides itself on having encouraged local variation, such as different names and activities of acceptor groups, and different approaches to targets, incentives, fines, and other forms of motivation. The 'Javanese' approach described above, however, is what is used to motivate and stimulate the bureaucracy and government officials (many of whom are in fact ethnic Javanese) who are so crucial to keeping up the momentum of the programme, including the nitty-gritty of getting supplies and resources out to the community. In a not unimportant way, government programmes are one of the forces of modernization and nationalization which, along with globalization, are softening the sharper edges of ethnic diversity in Indonesia.

Religious diversity

The family planning programme has long been the target of Islamic opposition in local areas and through periodic 'blow-ups' in the Indonesian press. The dividing line between politics and religion is very fine. Though the government has been active in building up the secular strength of Islam through the financing of mosques, promotion of religious education in government schools, and injection of Islamic ritual into secular ceremonies and government meetings and through mass communications, Muslim leaders remain critical of many aspects of the New Order period. While there is no particularly strong Muslim opposition at the moment, conservative Islam could emerge as a major force to be reckoned with as pressures build around the issue of the succession to President Suharto. A military contender might take up conservative Muslim causes in an attempt to build constituencies in a process of succession which is likely to be lively and confused. If this occurred, the family planning programme could very well come under serious critical domestic scrutiny.

Despite the overarching value of religious tolerance in Indonesia, the national family planning programme's concessions to Islam (such as

refusing to adopt sterilization as a national programme method and, in the early days, tip-toeing around the IUD until its official acceptance by key Islamic leaders) is not matched by concessions to other religions which lack political power. The national programme has consistently rejected periodic abstinence as a valid choice for many couples, even though programme leaders in Flores, East Nusatenggara, and Catholic pockets of other provinces have worked to promote KB-A (KB-Alamiah, or natural FP) among their parishioners. In areas of instability and often open conflict, like Timor Timur and Irian Jaya, political tensions can take on religious overtones, which can then be translated into criticisms of the family planning programme.

Social class

The strong social class contrasts in Indonesia, and their even stronger basis in Javanese society, sit uneasily with some of the more idealistic language of Pancasila, but not with the patrimonialism and other basic premisses used with great effect in the implementation of development programmes. The decision to begin family planning in rural areas, the use of authoritarian measures to recruit acceptors, and the special drives or safaris all rely on an underclass of poor, less educated clients, who accept such treatment as an extension of their experience in virtually all spheres of life. This is further accentuated in family planning, where policy directions set by elite males are directed at a largely female target audience. PAK works best in this overall environment.

The family planning programme, like other programmes, has thus largely chosen to utilize rather than transform such inequalities (Freedman *et al.* 1981; Hanhart 1993; Sarwono *et al.* 1995), and in fact to make a virtue of the approach as one that is culturally appropriate. The low priority given to counselling and information, especially written information, and the tendency for method choice to be made by providers rather than clients are specific examples of paternalistic approaches seen to be appropriate for women who want to do things on the basis of following others, and who are portrayed as being illiterate and submissive or fatalistic.

The upper class enjoys better-quality services and wider choice (Tempo 1994), and in urban areas is largely exempt from the 'target' audience. Recent Jakarta-based research found that poorer residents perceive the family planning programme as having different 'classes' in terms of goods and services, drawing a parallel to the services provided by different classes of rail travel (Iskandar 1995).

The Changing Nature of Society

Added to the spatial, religious, and social 'fault lines' are temporal divisions: the rapid social change in Indonesia. Much has been written about

the contribution of social change to declining fertility (see Gertler and Molyneaux 1994 for an overview), but it is interesting to speculate on what impact it may also have on the family planning programme's *modus operandi*, as a component in future fertility decline.

Global influences permeate the archipelago through modern forms of communication. By any objective measure, there has been an education revolution in Indonesia, and females have been major beneficiaries. One-quarter of ever-married women aged 15–49 have had some secondary or higher education; only 16 per cent have not had any schooling. Younger women, key 'targets' of the family planning programme, generally have higher levels of education. This education change is grafted on to the underlying female autonomy which characterizes Indonesia, implying exponential change in the relative position of women, and in their interaction with a wider world, including the family planning programme.

As an example, it is often said that 'privacy' is a Western value not shared by Indonesian women, so family planning need not emphasize confidentiality. An individual's family planning status and method are public information, and can be posted outside their homes or at village offices. Similarly, physical privacy, such as during a physical examination or IUD insertion, may not be protected, and is seldom reported as a problem by the clients in the field. Yet this 'Indonesian' value seems not only to attenuate but also to dissipate completely with higher social class. While in 1995 it is mainly educated urban women who explicitly object to intrusive aspects of the family planning programme, all citizens are increasingly exposed to foreign and indigenous media which portray very different orientations to central issues such as privacy and quality of services, which can lead to changed expectations for government programmes. It is commonplace to find letters to newspapers, for example, complaining about government and other services, and some reporters as well as the organized consumer education movement are turning their attention to quality of family planning services (Femina 1993; Zumrotin 1994; Warta Konsumen 1995).

The programme leadership is well aware of rising expectations; indeed, their social marketing campaigns and full-priced Gold Circle services are aimed at those who want better services. Overall, the programme hopes to increase the proportion of the population willing to pay for services to ensure 'self-sufficiency'. Ideally, the growth of the middle class, and their flight to the private sector, will gradually replace the authoritarian system of family planning, while keeping fertility decline on course. But during the slow transition social change may result in clients of all classes increasingly rejecting the heavy-handed approach of the government system while some remain unable to pay for better private-sector services.⁸ There may be increasing internal and external criticism that there is a stark 'dual class' system in which family planning for the rich is a service, and

for the poor an obligation. Can the government system change its approach to meet rising expectations and avoid such criticism?

Is Authoritarianism Inevitable?

Recent government rhetoric gives cautious support to a less authoritarian approach in family planning (see V. J. Hull 1994, discussing the most recent five-year development plan), and field research confirms that instances of coercion today are fewer than in the 1980s. Warwick (1986: 29) writes that, in contrast to programme origins, the evolving strategy is one of 'persuasion, control and pressure'. In 1995 provincial BKKBN heads were told to decrease 'top down' and 'coercive (*koersif*)' approaches; to be less strict, but not to 'let go' too soon either. Clients should be able to choose, but it should be 'controlled choice', a phrase analogous to the 'guided democracy' of Indonesian polity more broadly.⁹ Irrespective of exhortations from top leaders to promote voluntarism, the lower-level *Bapak* often have interests and leadership styles, not to mention beliefs about the citizenry, which are geared more to authoritarianism than educative or service-oriented approaches and, as noted earlier, they continue to be rewarded for numeric achievements.

Thus, authoritarianism will probably pervade the programme for some time to come, particularly in poorer areas with lower contraceptive prevalence, and reactions will continue to vary in this heterogeneous population. Whereas some women may flee to the ricefields at the approach of the family planning worker, others clearly prefer safaris to individual services. The mass mobilization efforts enable them to obtain free services in the kind of social, bustling atmosphere prized by many (Bazuki 1995). More difficult to predict in terms of ongoing use of family planning is what Warwick calls the 'borderline acceptor':

Some and possibly many clients have adopted family planning more out of conformity to pressure than out of conviction about fertility control . . . if clients were amenable to social influence in adopting family planning, they might be amenable to influences from other sources to discontinue. Should local religious leaders have a change of heart about birth control, borderline acceptors under their influence might make less effort . . . (Warwick 1986: 47-8)

It is true that even the most subjugated Javanese can follow orders (including half-hearted acceptance of family planning) without real commitment, and can easily change loyalties. In the case of Indonesian family planning, however, continuity is bolstered by the pre-existing and ever-growing demand for fertility control, particularly among ethnic Javanese, where in previous generations abstinence was widely practised, and by the major social change which is reinforcing this demand. Those who are motivated to control their fertility are willing to put up with a great deal,

including lack of information and inattention to side effects. Women can be staunchly stoic in the face of pain and discomfort, particularly when service providers and neighbours alike join forces to reinforce continued use of family planning. As the programme well recognizes, social pressure and social acceptance by the community are two sides of the same coin.

But are there signs of rebellion already? Despite programme emphasis on long-term methods, the IUD, once the object of aggressive safaris and still a strongly advocated method, is declining both in terms of new acceptors and as a percentage of current users. On the other hand, injectables are becoming increasingly prominent in the user profile, despite their relatively high cost. Government supply of injectables falls far short of demand, and the majority of injectable users now purchase supplies through the private sector. This is good news for the 'self-sufficiency mandate' of the BKKBN, but officials are concerned¹⁰ that this short-term method is replacing long-term methods in popularity, including in Bali, the stalwart IUD province—and that this change may have implications for fertility impact.

What about authoritarianism as an approach to stimulating government officials? There is no doubt that it has been the 'jewel in the crown' of family planning implementation, but it appears that commitment to the programme may not be as bureaucratically sustainable as leaders may wish. In a study of four major development programmes (family planning, rice intensification, expansion of primary education, and village public works), the family planning programme was considered by officials to be the hardest to implement and to have the least benefits. 'The results suggest that if regional officials were freed from all pressure to implement the four programmes, family planning would be the first to be dropped' (Warwick 1986: 484). This may be part of the explanation for a slight attenuation in 'target fever', and for the plateau of many services in the early 1990s.

Thus, the same traits that ensure the programme of powerful backing today could mean risk in future. A loosening of the control of the current government, or perhaps even a partial dismantling of the lower-level cones of authority, could have a dramatic impact on the programme through the disruption of current *bapak-anak buah* (patron-client) relationships. Weakening of the current Javanese ideological orientation could allow more freedom of expression in a general sense, and could also permit greater acknowledgement of provincial variations in approaches to development programmes, including family planning; but simply put, would the bureaucrats, and officials from the governor to the hamlet head, continue the work? An added complication in Indonesia is the fact that those 'doing the work' include officials from many government departments; and interdepartmental rivalries figure prominently in the current picture of family planning service delivery in Indonesia.

Interdepartmental Rivalry

In the early 1980s a reporter from an Indonesian daily asked the then Deputy Chairman of the BKKBN about problems of co-ordinating Department of Health and BKKBN tasks. The response was that, fortunately, the Chairman of the BKKBN was also the Minister of Health, and this was pivotal in ensuring co-operation. All that changed in 1983 when the Deputy Chairman became the BKKBN Chairman and, in 1993, concurrently the Minister for Population. Over this period the rivalry between the Department of Health and the BKKBN has acquired almost legendary status, an item much favoured for discussion among Jakarta-based analysts both within and outside the programme, and on both sides of the institutional fence. The integration of family planning with other efforts—health, nutrition, education—has been cited as an important strength of the Indonesian programme; however, the interdepartmental rivalry based on perceived ‘bureaucratic expansionism’ on the part of the BKKBN appears to be increasing in intensity (Warwick 1986: 1).

On the planning and policy level, there are difficulties arising from the competition for domestic and foreign funds, and from the power and influence that goes with large budgets. In a system built on ‘pyramids within pyramids’, these two organizations represent two interlocking ‘cones’ of power and authority which have many points of friction. It seems clear that the answer to such a conflict is not ‘restructuring’, since the BKKBN could not deliver the medical services needed for family planning, and the Department of Health is neither set up nor committed to provide the dynamic, goal-driven, comprehensive mobilization of social resources that the BKKBN has achieved over the years. The President’s decision would seem to have been to encourage ‘creative tension’ between the bureaucracies rather than trying to favour one over the other. In a sense, tying the State Ministry of Population closely to the BKKBN showed a commitment to maintaining the balance against the power of the Department of Health.

Just as important as the interdepartmental rivalry at the policy level are the field-level tensions in the family planning programme. The target-driven mission of the population programme has often resulted in a conflict of interest with the wider mission of health facilities. The BKKBN relies on them to provide clinical family planning services, yet the Health Department has a myriad of programmes, both preventive and curative. At peak times such as family planning mass mobilizations this demand on health services can be acute, requiring close co-ordination which is not always optimal (Sciortino 1992). Ironically, health—unlike family planning—is not one of the country’s high-priority development programmes upon which ‘success’ of individual regions, and their officials, is based. None the less, at the field level staff from these organizations often must

cooperate very closely, including sharing the frustrations of lack of supplies and inadequate equipment, with each set of workers lamenting the inability of their own, as well as the other's, bureaucracy to meet the service demands of clients.

A related issue is the concentration of power within the BKKBN bureaucracy itself. Whereas early evaluations stressed the youth and dynamism of the programme *vis à vis* more entrenched bureaucracies (T. H. Hull *et al.* 1977), more recent impressions are that, although it continues to generate new ideas, especially under its 'family welfare' rubric (see below), these innovations emanate ever more strongly from the top. The organization exhibits the hierarchical structure usually associated with the larger, more ossified, line departments. And, just as Indonesians are asking who will fill the political vacuum created by the eventual retirement of President Soeharto—the hotly debated topic of *Sukses* or succession—BKKBN-watchers ask whether there are any candidates waiting in the wings to step into the shoes of the energetic and powerful man who is the current and long-standing *Bapak* of that programme.

Family Welfare: A New Direction?

If family planning has succeeded in Indonesia because of the strong support arising out of the 'demographic imperative' of reducing fertility rates, how will the programme evolve in future as new goals and measures are defined?

Although family welfare (*keluarga sejahtera*-KS) has been the acknowledged objective of the Indonesian family planning movement for many years, the concept has 'come of age' with Law no. 10 of 1992, outlining the official definition and functions of the family and the overall objectives of the family welfare movement, including family planning. In addition, the government has constructed indicators of family welfare (both physical and non-physical) which, since 1994, are collected annually through a 100 per cent sample of all Indonesian families. Over the past two years, virtually all the old logos of 'KB' or FP for family planning have disappeared, replaced by the acronym for the 'Prosperous Family' (KS) movement.

Indonesia proudly points to its broad definition of family planning, expanded further by KS, as an example of pioneer 'beyond-family-planning' efforts endorsed by the ICPD in Cairo. In its policy documents, the family welfare 'platform' includes such programmes as income-generating schemes; a childrearing (under-fives) programme; family care for the elderly; safe motherhood and breastfeeding; family nutrition; and youth in family planning. Ideas being developed include bank savings and credit schemes, campaigns for postponing the first birth, discouraging divorce, and HIV/AIDS prevention through family resilience (stressing premarital abstinence,

marital fidelity, and family-life education of youth through parents). BKKBN programmes link with efforts of the Population Ministry, especially those aimed at population quality. In all cases, it is stressed that, whereas other ministries may assist the individual, the policy goal for the BKKBN/Population Ministry is aimed at the community and family.

Some observers lament that the move to family welfare is too abstract, and that it dilutes contraceptive services efforts. Many donors feel that there are few concrete programmes under the diffuse, value-laden rubric of 'family welfare', and fewer still that are worthy of donor financial support. Other observers, both within and outside the bureaucracy, have reacted even more cynically, seeing the movement as part of the politically motivated promotion of mythical traditional and religious family values which can be exalted as Indonesia's stand against the onslaught of Western liberalism. For other departments, some of the KS ideas have intensified interdepartmental jealousies and charges of further BKKBN empire-building. It is probably true that the move to family welfare stems from a variety of motives, not least of which may be bureaucratic survival (and consequent political and material survival of senior officials)—after all, a bureaucracy dedicated solely to co-ordinating contraceptive distribution through existing health service and growing private-sector channels could quickly do itself out of a job, and some may begin to ask the heretofore heretical question of whether Indonesia still needs a BKKBN.

At the moment it is too early to assess what impact KS will have on contraceptive service delivery. In real terms, the tasks of fieldworkers and volunteers have increased markedly, particularly with the annual family welfare survey of Indonesian families, which is gaining increased high-level political support as a means of identifying poverty and formulating poverty alleviation programmes. As the range of active programmes increases, there may be limits to how much the BKKBN can do, even given its strong capacity for community mobilization. Despite some inevitable cynicism, the KS movement has the potential for becoming a conduit for engineered social values on an enormous scale, as some research indicates the BKKBN has achieved for the small family norm (Adioetomo 1993). The key question is, which values? At the opposite extremes, KS could be a potential vehicle for innovative, democratically based notions of family and gender relationships—or for the strong reinforcement of paternalistic 'traditional'¹¹ values which could eventually even support pronatalist messages.

ICPD and Other International Influences

As a leader of the Non-aligned Movement, as the recipient of numerous international awards and plaudits for its family planning programme, and as a major exporter of family planning training and founding member

of the South-to-South Partners initiative, Indonesia is well placed to be a leader on the world population stage. In the period since the ICPD, however, the world population stage has undergone changes. Fundamental issues likely to be problematic in Indonesia include emphasis on a reproductive health approach including specific attention to sexually transmitted diseases and HIV and adolescent needs. This would mean a shifting away from demographic impact as the main indicator of family planning programme success and the promotion of greater emphasis on gender equality and quality of care. In the aftermath of ICPD, Indonesian statements have tended to take the line that Indonesia's programme was already implementing the Cairo agenda, within the crucial proviso provided by the section of the Programme of Action which guarantees respect for religion, values, existing norms, and national sovereignty.

This latter qualification is fundamental. Indonesia's Pancasila implicitly and sometimes explicitly denies individual rights and conditions for free choice.¹² People have an obligation to follow family planning since it is a government programme designed to promote the common good; there is no sense in which the 'people', much less individuals, are meant to be personally served by the government.¹³ Translated into the family planning programme, basic issues such as the right to full information are thus toned down, as in the following example:

both information and medical services information should be clearly given with complete clarity, but also with full responsibility to the existing conditions. An open and responsible approach has to be adopted. Individual rights have to be respected, but also social benefits. Attention to responsibility of the community and to the future needs to be strongly considered. (Suyono 1993a: 4)

In the field, such qualification most often translates to the withholding of information, particularly on side effects of contraceptive methods. There is extensive evidence from recent Indonesian surveys and qualitative research documenting limitations in the knowledge and technical competence of providers; provider bias in the provision of information and services; lack of counselling and information material; minimal client knowledge about how a method works or about possible side effects; supply and logistics problems; and superficial follow-up care (BKKBN 1994; Iskandar and Dharmaputra 1994; Iskandar *et al.* 1994; Widyantoro 1994; BKS-PENFIN 1995; Bazuki 1995; Sarwono *et al.* 1995; Fisher *et al.* 1995; IEN 1995).

That these factors were not prominent in much of the earlier literature on the Indonesian family planning programme reflects more recent emphasis by international and national researchers on the quality of services provided, rather than on numeric results and demographic impact, in line with the Cairo recommendations. Such findings are politically sensitive, because they are sometimes seen as criticizing the programme by applying a 'foreign' paradigm of evaluation using inappropriate standards (Suyono 1993a). At the field level, attempts to improve quality are

confronted by the existing system which continues to reward quantitative results over quality of services provided (Bazuki 1995).

International forums, donors, and foreign critics such as the NGOs which periodically attack the Indonesian programme's approach cannot change the direction of the programme overnight. Changes will likely come incrementally and indirectly, with the BKKBN continuing to test the local political waters to see the degree to which issues raised in Cairo have relevance. The criticisms may eventually have some impact, but not in the direct reformist fashion imagined by some critics. Rather, invoking the '*malu loop*', the criticisms will be turned into indirect, non-threatening general critiques which will not challenge the wisdom or authority of the leadership. Then, instead of following the demands or recommendations of local or foreign critics, leaders will suggest changes based on an 'indigenous' innovation, or internal invention, to 'enhance' rather than reconstruct the programme. Change is not impossible. In fact, it is inevitable. The only problem is that the indirection and modifications required to bring it about not only reflect the need to avoid direct criticism, but also risk producing enhancements which fail to address the basic problems, and imply long delays before real change is achieved.

THE FORCE OF IDEOLOGY IN SHAPING PAST AND FUTURE PROGRAMMES

I strongly suspect that much of the fertility decline of the last few decades has been the result not of policies and programmes but of the publicity and ferment of ideas with regard to high fertility produced by debate originally fuelled by research activities and academic interest.

Caldwell (1990: xi)

The belief that social and economic life is shaped by the ideas of intellectuals is not novel; it reminds us of Keynes's dictum on the influence of long-dead economists in shaping modern policies. But Caldwell's words have a broader meaning which seems particularly apt in the case of fertility decline in Indonesia. The international research activities and population debates of the 1960s shaped the thinking of a generation of technocrats, both in Indonesia and internationally, and their programme activities were directly aimed at changing the thinking of the people concerning the meaning and workings of the family and the nation's population. To a remarkable degree, Indonesians today accept the basic premisses promoted by those debates of three decades ago, and they translate that understanding into patterns of marital sexual behaviour very different from those followed by their parents and grandparents. This change in thinking is not always particularly profound, and in the Indonesian case it sometimes entails simply the internalization of slogans. None the less, most Indonesians believe (albeit at various levels of perception) that small

families will be good both for themselves and for their children,¹⁴ and they translate that belief into action by adopting modern contraception.

Yet if that change of thinking had occurred *in vacuo*, without other changes in the thinking of individuals and the organization of the state, it is unlikely that Indonesia would have experienced a halving of fertility in under a quarter of a century. That rapid and dramatic demographic change required the adoption of a broad range of ideas which were not so much the products of academic debate as they were the result of struggles in political ideology, and the emergence of a New Order government in the late 1960s which endorsed existing Javanese concepts of patrimonial authoritarianism. The Indonesian case shows the complex interactions of culture and politics which provided the substantial institutional base for family planning policies, programmes, and services.

Recent analyses of national fertility transitions have stressed the importance of culture, as distinct from social and economic change, in fertility decline (see Freedman 1995 for overview). Our analysis points to the political, economic, and social systems as being integral and interactive parts of the cultural system. It is illusory to try to separate the two. In many very basic ways, each integrated system has to be defined in its own cultural terms, or else the substance and the impact of the family planning programme can be misinterpreted. Despite the reports of 'community participation' and 'grass-roots' activities in glossy magazine articles, most serious observers acknowledge the high level of persistent pressure that has been characteristic of the Indonesian programme (T. H. Hull *et al.* 1977; Warwick 1986; Chauls 1994; Freedman 1995). In this sense, it is analogous to its East Asian neighbours—Singapore, Taiwan, Korea—where fertility decline is attributed to economic development while the crucial roles of authoritarian ideology and cultural systems are not always acknowledged. Without the supportive props of the authoritarian system under an unequivocal Javanese-style *Bapak* at its pinnacle, the Indonesian programme might more closely resemble its South Asian, rather than East Asian, neighbours.

This does not mean that an alternative political system could not have been successful in reducing fertility. As the rapid fertility declines in Sri Lanka and Kerala attest, family planning does not require patrimonialism, and, as the steady fertility declines in India and Bangladesh show, fertility can decline even in poorer, less literate polities characterized by raucous confrontational democracy. Ironically, the 'Revolution' of fertility in Thailand has been attributed to Buddhism's emphasis on the individual over the group (Knodel *et al.* 1987), while in Indonesia the family planning programme stresses the individual's obligations and responsibilities to the group.

While the pyramidal structure and patrimonial exercise of power in New Order Indonesia has provided a strong framework for the promotion of the family planning movement, it has also given rise to moral

strictures which inhibit researchers and evaluators. Feedback to drive systemic reform is problematic on a variety of levels:

1. *Hierarchy*. The *menganut* (obey) principle and ABS (*asal bapak senang*, or as long as the boss or 'father' is happy) work against critical appraisal and reform. The natural flow is 'direction' (*pengarahan*) from the top to the bottom, rather than 'correction' from the bottom to the top.
2. *Patrimonialism*. Criticism of a programme initiative is regarded as undermining the legitimacy of the governing *Bapak*, and through him the government as a whole (and the ultimate *Bapak*).
3. *Structure*. Since the BKKBN works through other government agencies and community organizations, criticisms are not purely 'internal'. In a *shame* culture (where shame is the main form of sanction), this means that the BKKBN has to be careful not to offend its various agents by openly criticizing their work, but it also means that attacks on programme implementation can be deflected away from BKKBN officials, resulting in a diffusion of responsibility and criticism.

When looking at the implementation of the Indonesian family planning movement and at the political declarations as to how it will operate in future, it is clear that the ICPD Programme of Action recommendations on the importance of individual choice, the role of women, and the responsibility of men are not likely to be quickly or comprehensively implemented in the Indonesian programme. In part this is because such major philosophical changes would be interpreted as criticisms of the way the programme has operated to the present time. But direct implementation of Cairo ideas is also unlikely because they would contradict basic Indonesian (New Order) values regarding the importance of group over individual needs. They also pose an inherent conflict between calls for equality in the position of women and the broadly defined destiny (*kodrat*) of women to give birth and bear the primary responsibility for childcare and contraception. As a result, not only does the 'political culture' create the ideological frame within which the logic of government action is formed, it also defines the subtle differences of language and belief which give rise to contradictions of domestic policy and international agreements, and the systematic blurring of definitions of such notions as 'choice', 'service', 'community participation', and 'female empowerment' which are allowed to take on different meanings and emphases according to the context and the practical impact of the idea. Indonesia, as leader of the Non-Aligned Movement, has made a particular virtue of the '*chapeau*' (i.e. the principles opening chapter II) of the ICPD Programme of Action, which allows nations to adapt or reject recommendations that are not in accord with their national sovereignty, cultural norms, and religious values (as defined by national leaders). For Indonesia, as for many countries, the *chapeau* is a convenient technique to avoid direct confrontation and debate over fundamental issues of reproductive health and rights.

This is not to say that greater individualism will not emerge, or that true programme commitment to quality and consumer service might not be developed. Rather, as the history of the programme has shown, such changes would require a reinterpretation—a redirection of the emphases—of various national ideologies, both secular and religious, to give strong support for such changes. If, in the meantime, leaders continue to stress numeric population targets over individual choice and service, and communities and families over individuals, ICPD Programme of Action reforms will be slower. Because culture and ideology are not the monopolies of leaders, change can still proceed as individuals of the growing middle class, the disgruntled poor, and outspoken NGOs press their cases for better service, and exhibit their disdain for slogans through humour—one of the few unrestricted outlets for protest—or indifference. Many in the middle class and virtually all in the upper class have already expressed their dissatisfaction with government services by turning to the growing, but expensive, private-sector providers. They are encouraged in this by the programme, which sees such a shift as growing 'self-reliance' rather than an indictment of government services.

It is important to recognize the great achievement of the programme in mobilizing the support and acceptance of the community, and in changing the thinking of Indonesians to support the 'small, healthy, prosperous family' ideas. But these successes need to be seen as segments of a larger socio-political transformation characterized by patrimonial authoritarianism and broad institutions of social control and governance. In the late 1960s, when the government family planning programme was established, the identification of a 'fertility' problem did not serve as a criticism of the moral authority of the government, and in fact much of the rhetoric on the need for fertility control blamed the Old Order regime for 'uncontrolled' fertility and a lack of concern for people's welfare. As a result, family planning received the commitment of strong political support for activities promoting contraception.

In the 1990s the challenges to the family planning programme are of a different nature. In areas of reproductive health and social policy, where Indonesia appears to be facing major problems—such as adolescent sexuality, the heterosexual transmission of HIV, the practice of both illegal and semi-legal abortion—the political-cultural emphasis on the family and 'traditional Asian values' as the keys to dealing with these issues seems to preclude either open public discussion of the problems, or more specific targeting of the solutions. Religious concerns arise in this regard, but it seems to go beyond the question of promoting any particular religious orthodoxy, and reflects instead a desire to avoid any questioning of the 'moral health' of society which would reflect on the legitimacy of political leadership. Acknowledgement of rising premarital sex, widespread extramarital sex, or the pervasive nature of the commercial sex

industry all challenge the 'paternal' authority of the government. As such, despite ample indications that these are common problems in Indonesian society, leaders alternately deny their existence, censor scientific research into the extent or causes of the problems, or attribute such problems to the impact of foreign values on Indonesian culture. To acknowledge, assess, and directly address the issues would be to question the moral strength of the nation and hence the government.

CONCLUSION

Is the Indonesian fertility transition on course? Such a query begs the question of what course fertility transitions are meant to take. Certainly Indonesian fertility has fallen dramatically, and will continue to fall, at least as long as basic services continue to be provided to satisfy the strong and growing demand for fertility control. But if those basic services fail to satisfy the needs of individuals for guaranteed supplies, appropriate treatment, and sufficient information, the potential for greater contraceptive use, and hence for more sustained fertility decline, will not be attained. This would also mean that the 'reproductive health transition' would be seriously off course.

The various potential courses of fertility decline are clearly not to be determined simply by the applications of new technologies, or the provision of foreign assistance, or the training of specialist staff. Instead, the choice of direction, and the mapping of a course of action, will continue to be the province of decisions by Indonesian leaders and citizens, in their continuing dialogue over the governance of the nation, the administration of the bureaucracy, and changing individual perceptions of reproductive health needs. While international leaders may declare the primacy of the individual's right to informed choice, this is not a concept that is easily implemented in the Indonesian programme. It is an idea that receives some rhetorical support by the leadership and has growing appeal among the Indonesian people—but its active implementation rests on the outcome of political tensions between demands for democracy and the fear of political instability that bolsters the existing authoritarian system.

NOTES

1. The framework builds on the classic insight of Davis and Blake (1956) that social, cultural, and economic factors can influence fertility only through initiating changes in specific elements of behaviour related to coitus, conception, and successful parturition. Their initial list of 11 'intermediate variables' was used by V. J. Hull (1976) to analyse the determinants of fertility in an

Indonesian community. The basic Davis–Blake variables were refined and reformed in ‘proximate determinants’ of fertility used by Bongaarts and others to study the relative contribution of marriage, contraceptive use, and abortion in reducing fertility during the demographic transition.

2. The ‘five pillars’ or basic principles of Pancasila are: belief in God; national unity; humanitarianism; social justice; and rule by consensus.
3. One example of the formal acceptance of paternal guidance of private matters is the requirement for all male Muslim civil servants to obtain the approval of their superiors if they plan to take a second wife, as allowed under the Marriage Law and the Muslim religion. This requirement is designed to discourage polygamy.
4. As might be expected, people caught in the dilemma of providing professional evaluations in the patrimonial hierarchy have a saying to describe the situation: *Ngono ya ngono, naning aja ngono*. Roughly, this translates as ‘It is, yes it is, but don’t say “it is”!’
5. Myrdal’s discussions of ‘soft states’ are relevant here, but the Indonesian case is interesting for the complex patterns of strength and weakness attendant on the workings of the moral authority in the cones of bureaucratic relations.
6. Though the phenomenon exists to varying degrees in all societies: a prominent feature of the international women’s movement has been to challenge the stereotypical pattern of the compliant woman *vis-à-vis* male authority, particularly in the health area.
7. The concentration of acceptor recruitment in these special drives has long been a subject of analysis and critique; T. H. Hull *et al.* (1977) discussed the annual spike in new acceptors to meet end-of-year target pressures early in the programme, and more recently Fisher *et al.* (1995) have presented a measure of monthly variation (the coefficient of variation) which shows striking, and for some methods increasing, concentration of new acceptor recruitment in the annual pattern.
8. The DHS and other sources (BKKBN 1994) have documented that the majority of consumers pay for family planning services in public facilities where they are often described as free. Free goods and services are generally provided at the time of mass programs (safaris), where long-term methods such as IUD and implants are promoted. The government is introducing on a pilot basis a scheme whereby families judged to be at low levels of family welfare in the annual survey done by the BKKBN will receive free services at public clinics and others will be directed to private outlets.
9. Interestingly, a BKKBN official from an Eastern Island province responded to such advice by suggesting that a top-down approach which ‘shook people to make them move’ was still needed in some areas where fertility is not yet low. Ironically then, as the programme develops, the authoritarian ‘Javanese approach’ may become more of a feature outside the Javanese cultural areas than in its area of origin.
10. Recently programme implementors were urged to ‘be careful’ about the rising number of requests for injectables which ‘must be discouraged’.
11. ‘Traditional’ here refers to the idealistic construct of values which is promulgated today as the antithesis of Western, liberal, individualistic values. In fact, ‘traditional’ family values in Indonesia have wide variation both historically

- (with a high degree of tolerance of premarital sex, female autonomy, and divorce) and geographically. (Some societies of eastern Indonesia today still sanction not only premarital sex but premarital childbearing.)
12. Indonesia has supported only 4 out of some 25 UN human rights conventions, fewer than countries such as China, Bangladesh, Iran, and Libya. At the 1993 UN World Conference on Human Rights in Vienna, a group of delegates headed by Indonesia, China, and Malaysia declared that the concept of human rights was a Western invention (Bok 1994).
 13. Adam Schwarz, in *A Nation in Waiting* (1994: 135), claims that the term 'civil servant' is a misnomer in Indonesia: 'in this quasi-feudal culture, it would be more accurate to say that government employees are the "owners" of the nation and the general public their servants'.
 14. Very few would say spontaneously that smaller families are conducive to development or 'the health of the nation' except on a rhetorical level, when interviewed by government representatives. More qualitative research is needed on the values that have guided behaviour changes; however, such research presents major challenges in Indonesia, where respondents and researchers alike are products of New Order indoctrination.

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The Role of Family Planning Programmes in Contemporary Fertility Transitions

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The implementation of family planning programmes has been the principal population policy instrument in the developing world over the past few decades. This paper reviews the controversy over the role these programmes have played in reducing fertility. Opposing views on a number of contentious issues (for example the significance of unmet need and unwanted fertility) are summarized and a consensus position is presented.

Surprisingly, recent estimates of the fertility reductions achievable through the implementation of strong family planning programmes differ only modestly—from 1 to 1.4 births per woman. Since only a small proportion of countries have implemented strong programmes, the (unweighted) average impact of programmes in 1985–90 is estimated at only 0.33 birth per woman. However, the (weighted) average, which gives the programme impact for the developing world as a whole, is estimated at 0.96 birth per woman in the late 1980s. This suggests that programmes have been responsible for about 43 per cent of the fertility decline in the developing world between 1960–5 and 1985–90.

Population projections made in the 1950s predicted the massive expansion of human numbers that has in fact occurred in the past four decades in the developing world. When these projections were first published, they led to considerable concern about the adverse consequences this unprecedented population growth could have for human welfare and the environment. This concern subsequently led to action. Since the 1950s, increasing numbers of governments in Africa, Asia, and Latin America have responded primarily by relying on the implementation of family planning programmes that provide women and men of reproductive age with access to and information about contraceptive methods. The availability of new contraceptive technology, in particular the pill and the IUD, greatly facilitated the provision of family planning services. The rationale for the emphasis on services rested largely on surveys which found that a substantial proportion of women of reproductive age expressed a desire to avoid pregnancy, but were not practising contraception. This unmet

need for contraception was often assumed to be largely due to a lack of access to contraceptive supplies. Hence, the provision of such access was seen as the most humane and effective way to reduce high levels of fertility and population growth. The health benefits of family planning for mothers and their children were also recognized and provided an additional rationale for these programmes.

Today, the international consensus on population policy, as summarized in the programme of action adopted at the International Conference on Population and Development (ICPD) in Cairo in September 1994, has expanded to cover a range of issues 'beyond family planning'. In most developing countries, however, implementation of family planning programmes remains the principal instrument of population policy. As a consequence, the bulk of the resources for the population sector (estimated at more than US\$5 billion annually) is still directly or indirectly devoted to family planning programmes.

With the strong emphasis on family planning services, one would expect a consensus on the central role of this programmatic approach in reducing fertility. But this is not the case. Criticism of family planning programmes is as old as the programmes themselves. Opponents have questioned the validity and significance of survey data that suggest the presence of unfulfilled demand for birth control, and they generally have urged a shift to 'demand' measures to lower high desired family sizes (Davis 1967; Hauser 1967). Such contrary views have in the past been largely ignored by the family planning establishment, particularly in the United States and large Asian countries. The rapid adoption of contraception throughout much of the developing world since the 1960s seemed to confirm the validity of the conventional view. However, with the recent publication of a detailed critique by Lant Pritchett (1994a), the family planning movement faces one of the most vigorous attacks ever mounted on its scientific underpinnings. Based on a detailed review of available data on the roles of wanted and unwanted fertility, unmet need, and family planning programme effort in fertility transitions of developing countries, he concludes that, to achieve low fertility, 'it is fertility desires and *not* contraceptive access that matter' (Pritchett 1994a: 39; emphasis in original). Pritchett's arguments carry more weight than those of his predecessors because he relies on the same survey data on unmet need and unwanted fertility that proponents have used to support their views.

The paper will examine this controversy by focusing on the four most central and contentious issues: (1) the significance of unmet need for contraception; (2) the role of unwanted fertility in the fertility transition; (3) the contribution of family planning programmes to past fertility declines; and (4) the potential contribution of programmes to future fertility change. For each of these issues, a summary of the opposing views of family planning proponents and critics (primarily Pritchett) will be

given first, followed by an assessment that will attempt to find common ground where it exists.

ANALYTIC APPROACHES

Before proceeding, it is useful to note briefly the different approaches used in the past to assess the demographic impact of family planning programmes. Over time, a wide variety of such evaluation methodologies have evolved (see United Nations 1978, 1979, 1982, 1985, 1986 and Ross and Lloyd 1992 for details).

The most critical problem with the existing methodologies is that, when they are applied to the same population, the results are often inconsistent. Lowest and highest-impact estimates can differ by an order of magnitude (Potter 1981). This highly unsatisfactory situation has contributed to the continuing controversy about the role of programmes. One of the key reasons for these discrepancies is that some methods estimate the *gross* impact of programmes, while others estimate their *net* impact. Gross impact measures the reduction in fertility that is attributable to the use of contraceptives obtained from a programme source. For example, a woman who has been sterilized at a government clinic will have no more births. In the absence of this sterilization (and other contraceptives), most women would have had additional births. These averted births are counted in estimates of a programme's gross impact. In contrast, the net impact measures the difference in fertility levels in the presence and the absence of the programme. The net impact can be expected to be smaller than the gross impact because the former takes substitution of other means of birth control into account. For example, a woman who was sterilized at a programme clinic might, in the absence of the programme, have relied on another method or another source. The net impact would actually be zero if she had obtained a sterilization from a private physician, while the gross effect might amount to one or more births. Similarly, at the population level there are examples where the gross impact is clearly large: in China nearly all users rely on government sources for contraception. The gross impact of China's programme is therefore nearly equal to the total fertility decline that has occurred in that country. However, one cannot conclude that without the programme fertility would have remained unaltered; surely, many couples would have found alternative ways to attain their preferences for increasingly smaller families. Nevertheless, in most countries the net programme impact is substantially smaller than the gross impact.

While the gross estimates of programme effects may be useful to programme managers, they are of little value to policy-makers concerned with the costs and benefits of investments in family planning programmes.

For them, the net impact is most relevant, and the remainder of this paper will discuss only net effects.

The net impact of a programme is difficult to measure because it requires the estimation of an unobservable quantity: the fertility decline that would have occurred if the population in question had not had an organized family planning programme. Subtracting this estimate from the actual fertility decline yields the desired net effect. Two approaches are available to obtain net estimates:

1. *Experiments* in which intervention and control populations are compared provide the most robust estimates of the potential impact of services. Past experimental studies leave little doubt that family planning programmes can significantly increase contraceptive prevalence and lower fertility (Freedman 1987; Phillips *et al.* 1988). Since true experiments are expensive and typically take several years to complete, only a few have been undertaken, and usually they have provided findings only for small and not necessarily representative populations.

2. *Regression analyses* rely on natural variations in programme strength among countries or regions for their assessment of the role of programmes in fertility decline. Past regression studies have unfortunately yielded a wide range of estimates for the average contribution of family planning programmes in developing countries—from as low as 3 per cent (Hernandez 1984) to a high of 40 per cent (Boulier 1985). Some of the reasons for these discrepancies will be examined in a later section.

A review of available evidence on the role of programmes over a decade ago by Parker Mauldin (1983: 289) concluded that 'the consensus of most analysts appears to be that, though precise quantitative credit cannot be allocated among socioeconomic factors, institutional factors, and policies and programs, there is considerable empirical evidence that large-scale family planning programs, when well managed, have a substantial effect on fertility . . .' This statement can fairly be said to reflect the consensus among supporters of these programmes today. The critics disagree for reasons discussed next.

OPPOSING VIEWS ON KEY ISSUES

The Significance of the Unmet Need for Contraception

Conventional view. Results from the earliest KAP studies were reviewed by Berelson (1965), who noted the low levels of contraceptive use despite the fact that 'substantial proportions of people in the developing world want no more children now—from nearly a half to three fourths' (p. 659). The contemporary view on this matter is summarized by the World Bank (1993: 2): 'Considerable unmet need for contraception exists. At least 10

per cent and as many as 40 per cent of married women of reproductive age in each developing country surveyed recently want to avoid a birth but are not contracepting.' To USAID, the largest international donor to family planning programmes, this evidence is a crucial element in its strategy for stabilizing population growth:

Over 100 million women in the developing world have an articulated but unmet need for family planning. Moreover, millions of young people will reach reproductive age in the near future, creating even greater demand for family planning services and imposing additional burdens on existing family planning systems. Providing information about and access to a wide range of appropriate family planning methods not only remains the most effective means of reducing population growth rates to levels consistent with sustainable development but also significantly improves the health of women and children. (USAID 1994: 486)

Critics. An assessment of the same evidence leads Pritchett (1994a: 30) to conclude that the 'level of "unmet need" and other measures of contraceptive access are not empirically important determinants of fertility'. He gives three principal reasons for his objection. First, 'the fraction of women not using family planning because of access, the supply portion of "unmet need", is quite small' (p. 31);

'unmet need' does not reflect just women who want contraceptives (a supply need) but also those women who require motivation to want what they are presumed to need. . . . Since access is often not the issue, even costless availability of contraception would not drive down 'unmet need' very far, a point confirmed by the existence of substantial 'unmet need' even in countries with excellent contraceptive access. (Pritchett 1994a: 31)

Second, 'a substantial portion of unmet need consists of women who are currently pregnant or amenorrheic whose pregnancy or most recent birth was either mistimed or unwanted' (Pritchett 1994a: 31-4); and third, 'Unmet need also includes a substantial fraction of women with demand for spacing, that is, who want more children but not immediately' (p. 34).

Comment. These criticisms are partially valid:

1. Access in the physical sense is indeed only one of many reasons for unmet need. When non-contracepting women who do not wish a pregnancy are asked why they are not practising contraception, the main reasons given typically relate to fear of side effects, lack of knowledge, and objections from family members (in particular the husband) and others (Bongaarts and Bruce 1995). Access and/or monetary costs are noted by only a minority of these women. This suggests that access, while certainly important, is not an overriding issue. The conclusion is consistent with evidence from so-called distance-use studies, which examine the relationship between the practice of contraception in a community and the distance to a source of contraceptive supplies. These studies find generally only

a weak link (Ochoa and Tsui 1991; Anderson and Cleland 1984). While Pritchett's views on the role of access are reasonably on target, it is not correct to assume that the impact of family planning programmes is limited to providing greater access. In fact, it is highly likely that much of the impact of programmes is attributable to their impact on other causes of unmet need. Such effects can be expected because of information dissemination—both through the media and from provider to client—and also because of the legitimation of what usually has been a highly sensitive and private matter. The diffusion of knowledge about fertility regulation and the social acceptability of private control over reproductive behaviour have played a critical role in fertility transitions (Knodel and van de Walle 1979; Retherford and Palmore 1983; Cleland and Wilson 1987; Watkins 1987). In fact, these processes have probably been more important in raising contraceptive use than has the mere physical accessibility of methods.

2. The most widely quoted estimates of unmet need (i.e. those published in the Demographic and Health Surveys (DHS)) do indeed include substantial proportions of pregnant and amenorrhoeic women whose pregnancies were not planned. This practice seems at first questionable, because these women are not at risk of conceiving and therefore are not currently in need of contraceptive protection. However, the practice is justified on the grounds that these women would not have become pregnant had they implemented their reproductive preferences by practising 100 per cent effective contraception in the past. These women had an unmet need when they conceived, and most would have been using contraception at the time of the survey if their past unmet need had been addressed. However, conventional estimates of unmet need do overestimate to some extent the proportion of additional women who would be contracepting in a 'perfect contraceptive society', i.e. in the absence of mistimed or unwanted pregnancy (Bongaarts 1991). The principal reason for this overestimate is that some women with mistimed pregnancies would have been pregnant or amenorrhoeic with *planned* pregnancies at the time of the survey, even if they could have timed their past childbearing exactly as desired. The corrected unmet need estimates are significantly lower than those published by DHS, particularly in sub-Saharan Africa; for example, in Ghana the adjusted unmet need is 27 per cent instead of 35 per cent among married women of reproductive age (MWRA). Nevertheless, even with this adjustment, the level of unmet need remains substantial (see first two columns of Table 18.1).

3. There is no doubt that a large proportion of unmet need is for spacing pregnancies, i.e. among women who want more births later. This is particularly true in sub-Saharan Africa, where the unmet need for spacing represents generally more than half, and in several countries even more than two-thirds, of the total unmet need (see last two columns of the table). Although Pritchett does not elaborate this point, he seems

TABLE 18.1 Alternative Measures of Unmet Need and the Spacing and Limiting Components of Unmet Need for 24 Developing Countries

	Unmet need (% of MWRA)		Components of unmet need ^a	
	DHS definition	Bongaarts's revision	Spacing	Limiting
Botswana	26.9	20.8	13.6	7.2
Burundi	25.1	19.6	12.4	7.2
Ghana	35.2	27.1	18.3	8.7
Kenya	38.0	30.7	15.7	15.0
Liberia	32.8	26.5	13.9	12.6
Mali	22.9	17.6	12.0	5.5
Togo	40.1	31.3	20.0	11.4
Uganda	27.2	21.0	13.9	7.1
Zimbabwe	21.7	18.3	7.1	11.3
Egypt	25.2	21.6	7.1	14.6
Morocco	22.1	18.1	8.8	9.3
Tunisia	19.7	16.3	7.4	8.8
Indonesia	16.0	12.9	7.1	5.8
Sri Lanka	12.3	10.0	5.0	5.0
Thailand	11.1	9.3	3.9	5.3
Bolivia	35.7	32.1	6.7	25.4
Brazil	12.8	11.1	3.4	7.8
Colombia	13.5	11.6	3.6	8.1
Dominican	19.4	16.1	7.0	9.1
Ecuador	24.2	20.6	7.6	13.0
Guatemala	29.4	24.1	11.5	12.6
Mexico	24.1	20.4	7.7	12.7
Peru	27.7	24.7	5.7	19.0
Trinidad and Tobago	16.1	13.5	5.8	7.7

^a Based on Bongaarts's revision.

Sources: Westoff and Ochoa (1991); Bongaarts (1991); Bongaarts and Bruce (1995).

convinced that addressing the unmet need for spacing is less important for fertility decline than the unmet need for limiting. This view is probably correct, but the evidence on the issue is indirect. The effect of the unmet need for limiting on unwanted fertility is not in question. As is demonstrated in Fig. 18.1, the relationship between these variables is strongly positive and statistically highly significant ($R^2 = 0.8$). On average, a reduction of 10 per cent in unmet need for limiting reduces unwanted fertility by 1.1 births. The impact of reducing the unmet need for spacing on fertility is likely to be much smaller for the simple reason that desired family size remains unaffected. Some temporary effects on the timing of births may be expected, but in the absence of changes in preferences the

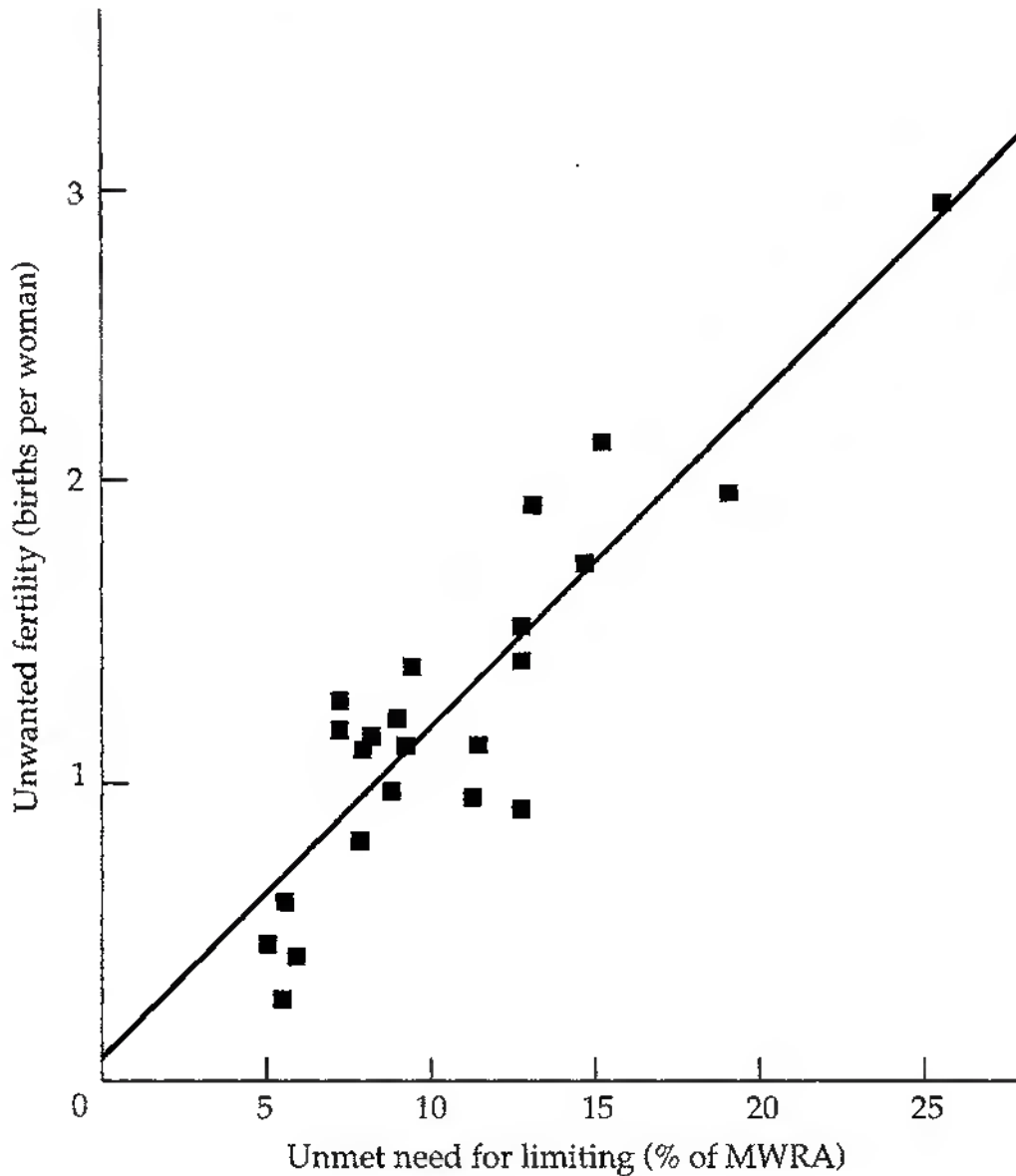


FIG. 18.1 Relationship between unwanted total fertility rate and unmet need for limiting, 25 developing countries

Source: DHS data files.

long-term effect on fertility is likely to be modest. This conclusion is consistent with the finding that average birth-interval durations in different populations are not correlated with use of contraception for spacing purposes (Bongaarts 1992). The apparent reason for this is that the birth-spacing preferences of women or couples are relatively invariant over the course of a fertility transition. In traditional societies, the desired spacing is maintained through traditional practices such as breastfeeding and postpartum abstinence. As the use of contraceptives for spacing rises, these traditional practices are abandoned. The net result is that birth intervals remain relatively invariant as fertility levels decline. As a consequence, efforts to reduce the unmet need for spacing, while desirable to improve reproductive health, in practice may not yield major fertility effects.

In sum, the unquestionable existence of an unmet need for contraception, while not as extensive as the proponents of programmes believe, is more important than Pritchett suggests.

The Significance of Unwanted Fertility

Conventional view. The chain of causation linking family planning programmes to population growth runs from improved services to reduced unmet need, to a decline in unwanted childbearing, and finally to lower fertility. Estimates of unwanted fertility range from less than 0.5 birth in Thailand, Sri Lanka, and Indonesia to over 2 births in Bolivia and Kenya (Bongaarts 1994b). On average, about one in four births is unwanted in the developing world outside China. Bongaarts *et al.* (1990: 305) conclude that 'unwanted childbearing can be reduced by improvements in the quantity and quality of family planning services'.

Critics. There is no significant dispute over the existence or magnitude of unwanted fertility, but, writes Pritchett, 'the answer to why actual fertility differs across countries is that desired fertility differs. In countries where fertility is high, women want more children. "Excess" or "unwanted" fertility plays a minor role in explaining fertility differences' (Pritchett (1994a: 3). Further, 'if improved family planning programs were driving fertility declines, they should be accompanied by a reduction in excess fertility. This is not the case. The impressive declines in fertility observed in the contemporary world are due almost entirely to equally impressive declines in desired fertility' (Pritchett 1994a: 34).

Comment. A first look at the empirical evidence leaves no doubt about the validity of Pritchett's views on the correlation between fertility and its wanted and unwanted components. As shown in Fig. 18.2, there is a strong positive relationship between overall and wanted fertility. (The former exceeds the latter by an amount equal to unwanted fertility because total fertility is the sum of its wanted and unwanted components.) In contrast, unwanted and wanted fertility are not related (see Fig. 18.3); there is even a slight, but not significant, tendency for unwanted fertility to rise as wanted fertility declines. This evidence leads Pritchett to conclude that programmes do not matter much because if they did unwanted fertility would be lower in populations with low fertility. This view is mistaken for the following reasons.

A closer look at Fig. 18.3 provides a critical clue to what is actually happening. If programmes did not matter, then countries with weak and strong programmes should be randomly distributed across the data points in the figure. This is clearly not the case. Populations with strong programmes are concentrated in the lower left corner; i.e. they tend to have low wanted and unwanted fertility levels. Among countries with weak or non-existent programmes, unwanted fertility is negatively related to wanted fertility.

An explanation for this interesting finding requires a brief digression to discuss in general terms the trends in fertility and its components

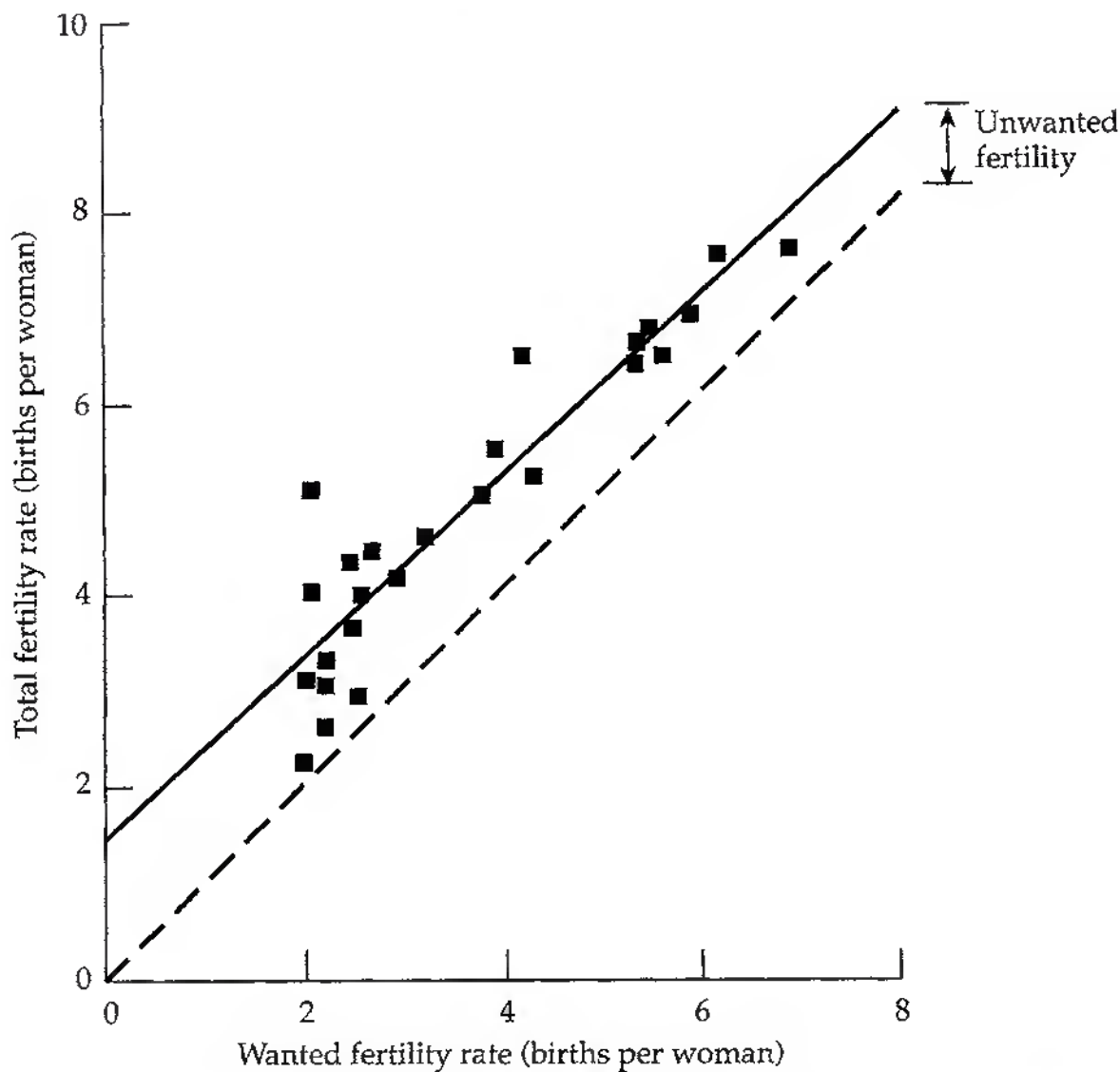


FIG. 18.2 Relationship between total fertility rate (solid line) and wanted fertility rate (dashed line), 25 developing countries

Source: DHS data files.

which one would expect to find over the course of a transition if programmes operated as claimed by family planning programme proponents. Figure 18.4 plots the broad trends in the key variables relevant for present purposes. The bottom line represents wanted fertility, which declines as a society develops and the value of children diminishes. In no society today do all women achieve precisely this wanted level of childbearing; some excess, unwanted, fertility is inevitable because of disagreements between partners, fear of side effects of contraceptive methods, imperfect contraceptive technology, and other reasons. The number of unwanted births is constrained by a society's potential level of fertility, i.e. the fertility that would prevail in the absence of deliberate attempts to reduce family size through contraception or abortion. In Fig. 18.4 this level of potential fertility is assumed to remain unchanged as development proceeds. Potential and wanted fertility represent the upper and lower boundaries for actual, or observed, fertility. If couples fail to control their childbearing, potential fertility prevails regardless of preferences; on the other hand, if couples are completely successful in implementing their preferences, then actual fertility would equal wanted fertility. In reality,

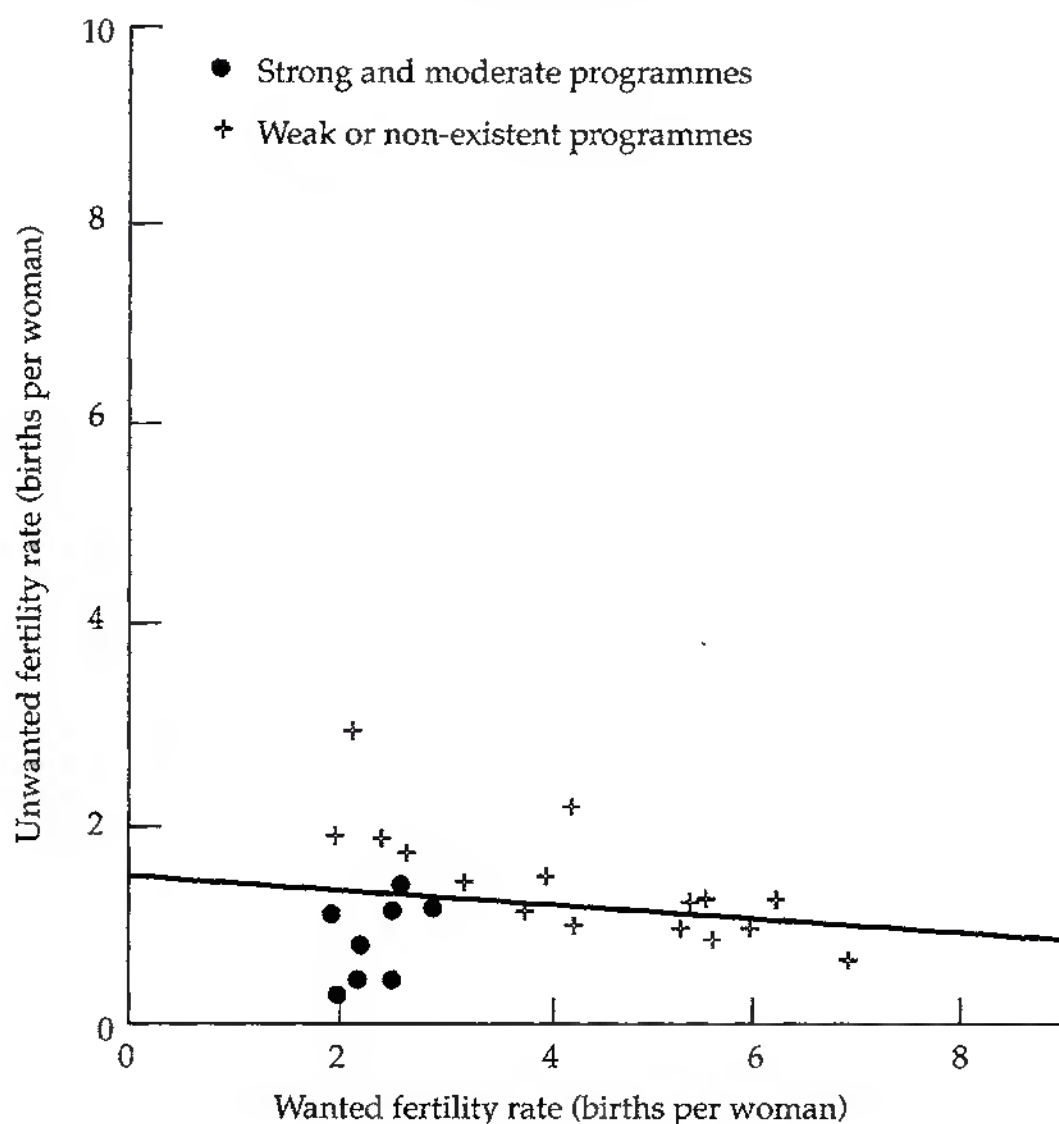


FIG. 18.3 Relationship between unwanted and wanted fertility rates by strength of family planning programmes, 25 developing countries

Source: DHS data files.

observed fertility falls between these boundaries. Early in the transition, wanted fertility is typically high and not far from the potential level, thus keeping unwanted fertility at modest to low levels. As a society develops, the difference between potential and wanted fertility rises, and the potential for unwanted fertility increases correspondingly. The actual level of unwanted childbearing depends on the efforts couples make to implement their preferences. It is plausible to assume that these individual efforts will be more successful in countries with a strong family planning programme.

If this description of the forces affecting unwanted fertility is not too far off the mark, one would expect a rise in unwanted fertility as countries proceed through the transition in the absence of significant programme effort. There is indeed a highly significant negative correlation between unwanted and wanted fertility for countries with weak or non-existent programmes (see Fig. 18.3), and line A in Fig. 18.4 represents this trend. Furthermore, one would expect that, given a particular level of wanted fertility, unwanted fertility should be lower the stronger the programme effort. This is also clear from the data in Fig. 18.3: women in countries with strong or moderate programmes (which in this sample are

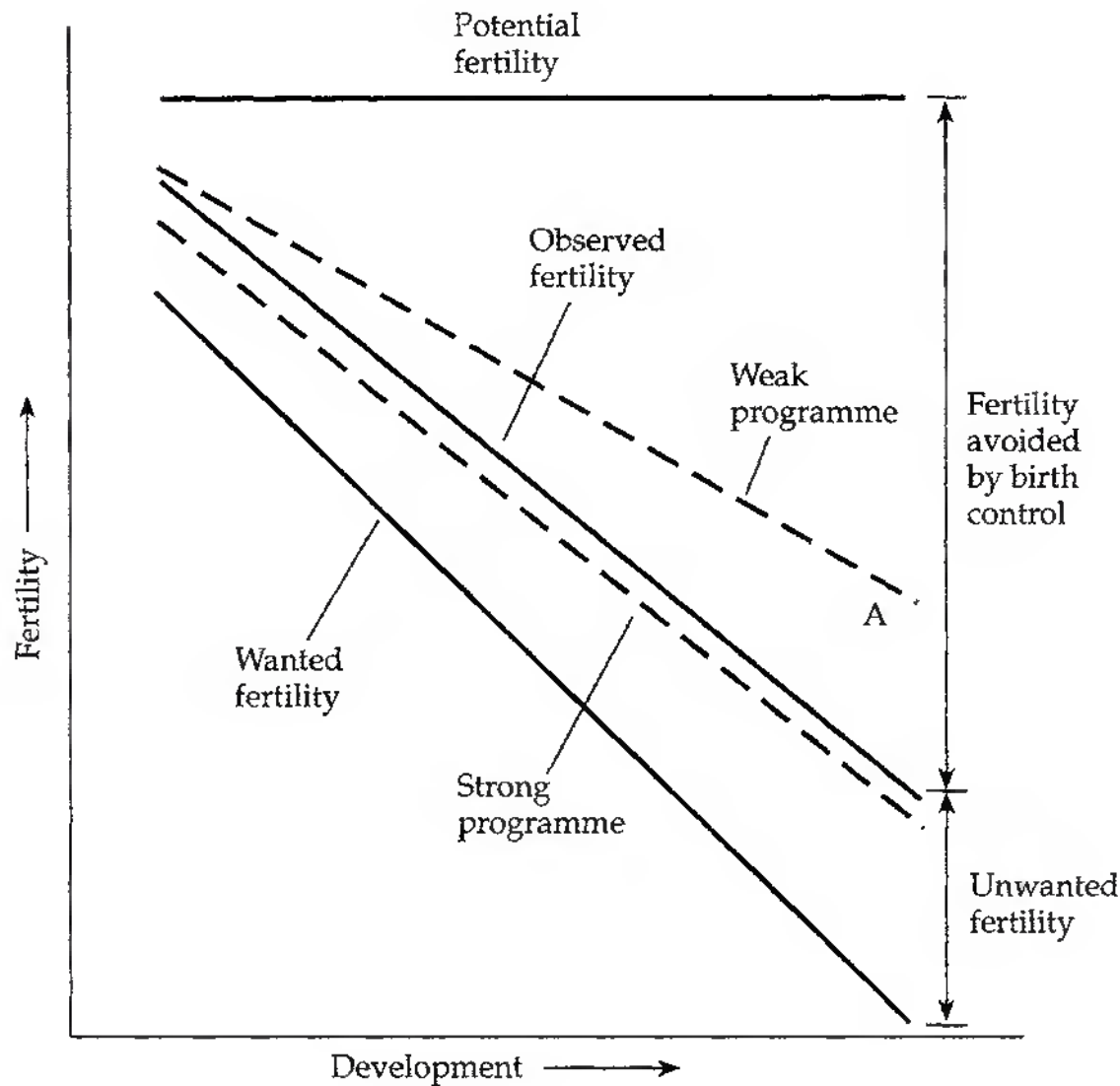


FIG. 18.4 General relationships between potential, observed, and wanted fertility, by level of development

found only in countries with relatively low wanted fertility) have less unwanted fertility than women in countries with weak programmes. These relationships are examined further with a simple multivariate analysis undertaken by Bongaarts (1994b). In this regression, unwanted fertility (*UNWTFR*) is the dependent variable, and wanted fertility (*WTFR*) and programme effort (*FPE*) are the independent variables (*t* statistics in parentheses):

$$UNWTFR = 3.42 - 0.323 \text{ ' } WTFR - 0.028 \text{ ' } FPE, \quad R^2 = 0.56 \text{ (} N = 25\text{).}$$

(4.5) (5.1)

These results strongly confirm the existence of the relationships discussed above:¹ declining wanted fertility leads to higher unwanted fertility, but this effect can be offset by increased programme effort. On average, a 10-point increase in programme effort leads to a decline in unwanted fertility of 0.28 birth. Turning a weak programme with a programme effort score of 20 into a strong one with a score of 70 reduces unwanted fertility by 1.4 births per woman. Fig. 18.5 plots the level of unwanted fertility by programme effort for countries near the end of the

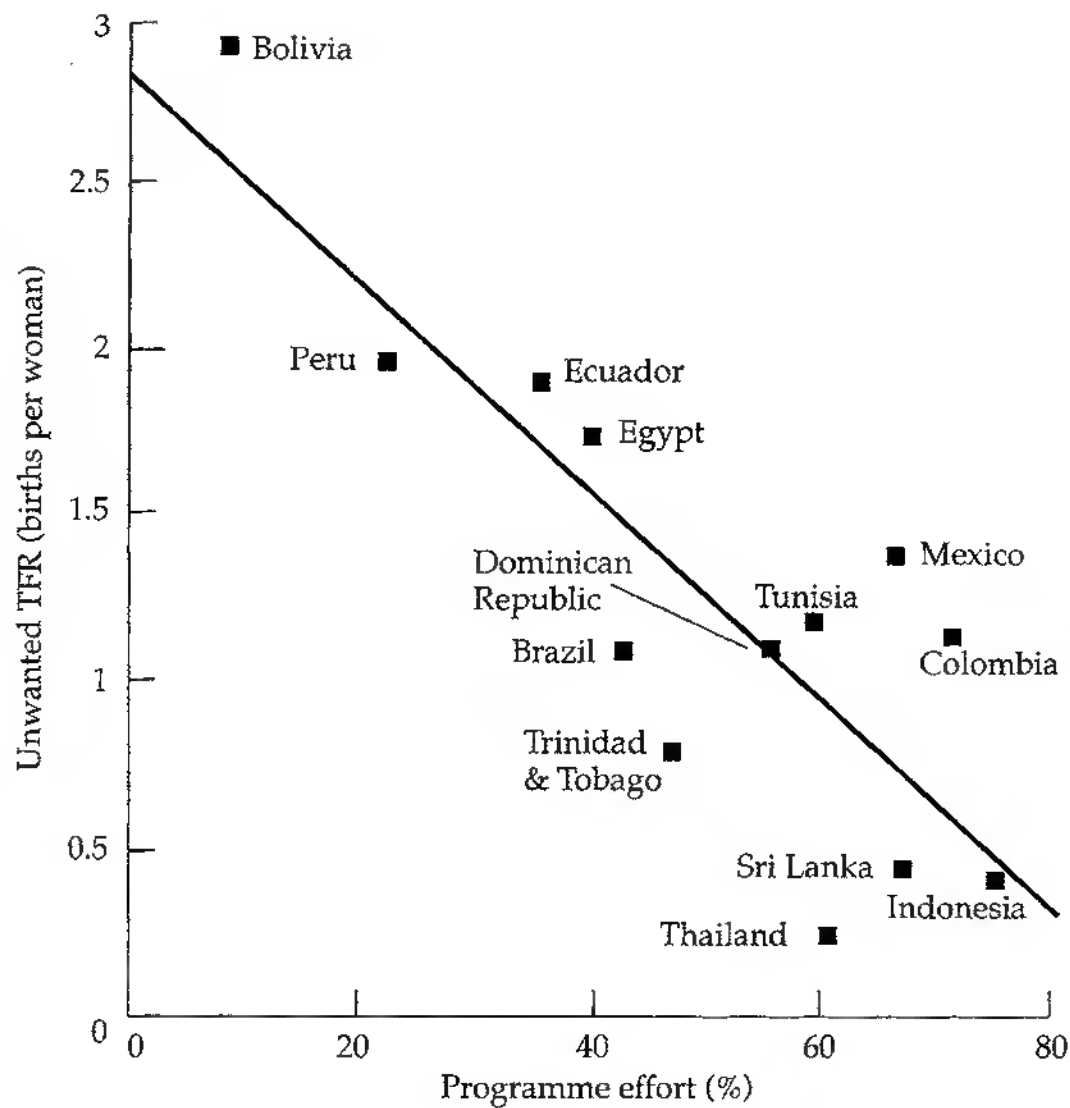


FIG. 18.5 Relationship between unwanted fertility and family planning programme effort (FPE) for countries near the end of the wanted fertility transition

Sources: Lapham and Mauldin (1985); DHS data files.

transition in wanted fertility ($WTFR < 3$). The programme effect is clear and highly significant.

This analysis has focused on the causes of variation in unwanted fertility. It is reasonable to hypothesize that programmes can have some effect on wanted fertility, in particular when they have substantial Information, Education, Communication (IEC) campaigns to encourage couples to have smaller families. To test this hypothesis, a regression of wanted fertility on family planning effort (FPE) and various development indicators was undertaken. The impact of programme effort was not statistically significant, but the level of development had a strong and highly significant negative impact on wanted fertility.

Pritchett correctly noted the absence of a correlation between unwanted and wanted fertility, but incorrectly concluded that programmes are ineffectual. The programme effect on unwanted fertility is not evident in such simple correlations because it is obscured by a compensating effect of declining wanted fertility as countries move through the fertility transition.

The Past Fertility Impact of Family Planning Programmes

Conventional view. 'Organized family planning programs have contributed significantly to contraceptive availability and acceptability and therefore to fertility reduction. Their demographic impact to date appears to have been large' (World Bank 1993: 11). The impact of programmes in the early 1980s is estimated at 1.2 births per woman in the developing world as a whole (Bongaarts *et al.* 1990).

Critics. 'Fertility is quite unresponsive to changes in contraceptive access . . . [and] differences in family planning effort explain very little (at most 5) of the large cross-country differences in fertility' (Pritchett (1994a: 3). Hernandez (1984) reaches similar conclusions: 'Insofar as the ultimate goal of government-supported national family planning programs in third world countries has been to initiate major fertility reductions that are independent of other fertility determinants, these programs have experienced little success and considerable failure' (p. 134).

Comment. Assessments (including those of Pritchett and Hernandez) of the fertility effects of family planning programmes are almost exclusively based on regression analyses of the determinants of country-level fertility. Such analyses produce a variety of statistics to quantify programme effects, two of which have been used most often: (1) incremental fertility variance explained by selected independent variables and (2) the unstandardized regression coefficients. This is not the place to comment in detail on the technical aspects of these regression statistics; it suffices to note that the incremental variance approach as used by Pritchett and Hernandez is biased for reasons given by Tolnay (1987) and Boulier (1985). We will therefore focus here on results derived from regression coefficients.

Pritchett's claim that fertility is unresponsive to family planning programmes is based largely on regressions in which fertility is the dependent variable and wanted (or desired) fertility and family planning programme effort (FPE) are the explanatory variables. He concludes from these analyses that 'settling on 0.02 as an estimate of the FPE effect . . . seems fair' (Pritchett 1994b: 625). He considers this evidence for a small programme impact because 'an incremental effect of 0.02 would require a 50-point (on a scale of 0 to 100) increase in FPE to reduce fertility by just one birth' (Pritchett 1994b: 626). Interestingly, these estimates of programme effect differ little from those obtained by Bongaarts (1994b) or Bongaarts *et al.* (1990). As noted, Bongaarts (1994b) estimates the coefficient of FPE to be 0.028, which would imply a reduction in fertility of 1.4 births, or a change of 50 points in FPE—roughly the amount needed to turn a weak programme into a strong one.

TABLE 18.2 Estimates of Unweighted and Weighted Averages for the Fertility Impact of Family Planning Programmes in 1985–1990, and Fertility Decline in 93 Developing Countries between 1960–1965 and 1985–1990^a

	Fertility impact of programmes, 1985–90	Observed fertility decline 1960–5 to 1985–90	% of decline due to programmes
Unweighted average	0.33	1.44	23
Weighted average	0.96	2.22	43

^a For individual countries, the programme effect on fertility is estimated as $0.024 \times (FPE - 20)$, where *FPE* is the family planning effort score (% of maximum) from Lapham and Mauldin (1985), 0.024 is the average of the regression coefficients obtained by Bongaarts (1994b) and Pritchett (1994b) (see main text for further discussion), and 20 is assumed to be the minimum level of programme effort needed to achieve a fertility impact. Fertility declines between 1960–5 and 1985–90 were obtained from United Nations (1992).

This difference between Pritchett's and Bongaarts's estimates for the average impact of a strong voluntary programme (1.0 *v.* 1.4 births per woman) is not worth arguing about, and for present purposes it will be assumed that 1.2 is typical. (China's programme, with its involuntary component, can be expected to have a larger impact.) A key remaining issue is how important this effect is considered to be. Assessments differ. Pritchett finds the effect 'demonstrable, but quantitatively small' (1994b: 626), in part because a decline of around one birth per woman amounts to only about one-fourth of the fertility decline that typically takes place during a complete fertility transition from six to two births per woman. But advocates of family planning programmes point out that strong programmes can be responsible for fully one-third to one-half of the observed fertility declines in countries that are still in transition, and in exceptional cases, such as Bangladesh, can be more than half. Both views are valid.

When providing overall measures of programme effects for many countries, there is further potential for confusion because, depending on which type of summary measure is used, the impact can appear large or small. This is demonstrated with the comparison of unweighted and weighted averages of programme impact on fertility in the first column of Table 18.2. The unweighted average, which assigns equal weight to each country, is estimated to be only 0.33 birth per woman in 1985–90. This estimate was based on 93 developing countries whose programme effects varied from 0 in many African countries to 1.54 births per woman in China; countries with strong programmes fell between 1 and 1.5. The unweighted average is low not because programmes have only a tiny impact, but because most countries have weak or non-existent programmes. According to measures of programme effort by Lapham and Mauldin (1985), only 10 of the 100 countries included in their study had strong programmes,

and an additional 16 had moderate programmes; programmes in the remaining 74 countries were classified as weak, very weak, or non-existent.

In contrast, the weighted average of the programme effect in the same group of developing countries amounts to 0.96 birth per woman, three times the unweighted average. The difference between the weighted and unweighted averages is large because the most populous countries tend to have strong or moderate programmes (e.g. China, India, Indonesia, Bangladesh), and because countries vary widely in size.

Table 18.2 also presents estimates of the average fertility decline between 1960–5 and 1985–90, and the percentage contribution of family planning programmes to this decline. The weighted averages represent the LDCs as a whole, and they show that fertility declined by 2.22 births per woman between the early 1960s and the late 1980s. Fully 43 per cent of this decline was therefore attributable to family planning programmes. (Without China, the average decline is 1.65 births per woman, 43 per cent of which is attributable to programmes.) This is a finding that is likely to be quoted by supporters of these programmes. Analysts who want to minimize the role of programmes no doubt prefer to point to the unweighted average impact, which is only 0.33 birth per woman (23 per cent of the unweighted average decline). Again, both conclusions are accurate, even though they appear to be inconsistent. These results indicate that summary estimates of programme effect have to be interpreted with care, lest they give misleading impressions. There can be little doubt, however, that programmes have made a substantial contribution to the past fertility decline of the developing world.

The Potential Future Fertility Impact of Family Planning Programmes

Conventional view. 'Filling all unmet need would bring fertility down, for the majority of countries outside Africa, to close to two children per woman' (World Bank 1993: 2). 'Improved access to high-quality reproductive health services . . . will carry the world a very long way towards replacement-level fertility' (Sinding *et al.* 1994).

Critics. 'If every country in the world were to have the strongest observed voluntary family planning program, the developing country weighted average of fertility in 1989 would fall by just 8 per cent' (Pritchett 1994b: 626).

Comment. About 20 per cent of fertility in LDCs is unwanted (Bongaarts 1994a). Since LDC fertility in 1994 is estimated at 3.4 births per woman on average, a drop of 20 per cent would indeed bring fertility more than half-way to the replacement level of around 2.1. This calculation assumes,

however, that all unmet need and the corresponding unwanted childbearing can be removed by implementing strong programmes everywhere. Pritchett instead assumes implicitly that, even with strong programmes, some unmet need and hence some unwanted fertility will remain. This is indeed more realistic. Perhaps the best one can hope for is a decline in the high unwanted fertility still found in many countries to the lowest levels of about 0.4 birth per woman that have been achieved in countries with strong programmes such as Sri Lanka, Thailand, and Indonesia. (China has presumably a near-zero level of unwanted childbearing, but this is not an example other countries should follow.) Reducing unwanted childbearing to just 0.4 birth per woman outside China would reduce LDC average fertility from 3.4 to 3.0 births per woman—about an 11 per cent decline.² The reason for this rather modest future impact of fully successful efforts to strengthen family planning programmes is that most of the very large countries already have strong programmes, as mentioned above. There is, of course, room for improvement even in these countries, especially in India and Pakistan. In addition, many smaller countries still have weak programmes, and improvements there will make a substantial difference. For the developing world as a whole, however, over two-thirds of the potential fertility impact of programmes has already been realized. On this point, Pritchett's views are quite reasonable.

REACHING A CONSENSUS

Neither of the competing views discussed here can claim to be fully accurate, and both sides in the debate have to some extent overstated their case. Regarding the specific substantive questions at issue, a reasonable consensus would be as follows:

1. There is a substantial unmet need for contraception in most developing countries, but its significance is less than suggested by the widely available DHS estimates. A substantial proportion of unmet need is for spacing (i.e. among those wanting more births later), which is of lower demographic significance than the unmet need among women who wish to stop childbearing. Addressing unmet need is not simply a matter of improving access to contraceptives. While access to services remains a significant problem, it is typically not a dominant cause of unmet need, and other important factors (e.g. fear of side effects, lack of knowledge, and lack of husbands' co-operation) should be given higher priority by programmes.

2. Declines in unwanted fertility (if they occur at all) are generally much smaller and of less significance than declines in wanted fertility as countries move through their fertility transitions. This does not mean, however, that programmes are ineffective. Without family planning programmes, unwanted fertility would be expected to rise, and it is this rise

that can be averted or reversed by implementing effective programmes. Strong programmes do in fact reduce unwanted childbearing.

3. Strong voluntary family planning programmes can reduce fertility on average by about 1.2 births per woman. The actual programme impact varies widely among countries, primarily because resources devoted to these interventions differ greatly. As a weighted average, the fertility level of the developing world in the late 1980s was nearly one birth below the level that would have prevailed without programme interventions. This amounts to fully 43 per cent of the observed fertility decline between the early 1960s and the late 1980s. The future additional effects of strengthening programmes in the developing world is limited because strong programmes already exist in the most populous countries. Implementing strong programmes immediately in every developing country can be expected to reduce fertility further by about 0.4 birth per woman.

In sum, programmes have had a substantial effect on trends in reproductive behaviour in many countries. Similar effects can be expected in the future if programmes are improved in countries where they are weak or non-existent. For the entire developing world, however, more than two-thirds of the potential programme impact has already been achieved, leaving limited, but still significant, gains to be achieved by more vigorous programme efforts. This finding also suggests that various 'beyond family planning' measures, such as improvements in the welfare of women and girls as advocated by the programme of action adopted at the ICPD in Cairo, should be given higher priority.

This review has focused on the role of programmes in contemporary fertility transitions, but since a key rationale for investments in family planning programmes has been their ability to slow population growth, a brief comment on this issue is in order. Caldwell (1994) concludes that past investments in family planning programmes have accelerated fertility declines by more than a dozen years, which in the long run may mean 'an ultimate stationary population of 12 billion instead of 20 billion' (Caldwell 1994: 16). Bongaarts *et al.* (1990) see a somewhat smaller but still substantial impact.³ They estimate that, in the absence of family planning programmes, the fertility transitions would have been delayed by nearly a decade, and, as a result, the population of the developing world could have been expected to reach 14.6 billion in 2100 instead of the 10 billion expected in the standard or medium projections by the World Bank and the United Nations. These projections assume that programme effort will remain at current levels in the future. Achieving this will require substantial additional resources because the population of men and women with a potential demand for contraception will grow as new and larger cohorts reach reproductive age. The key finding from these studies is that future population growth is highly sensitive to modest

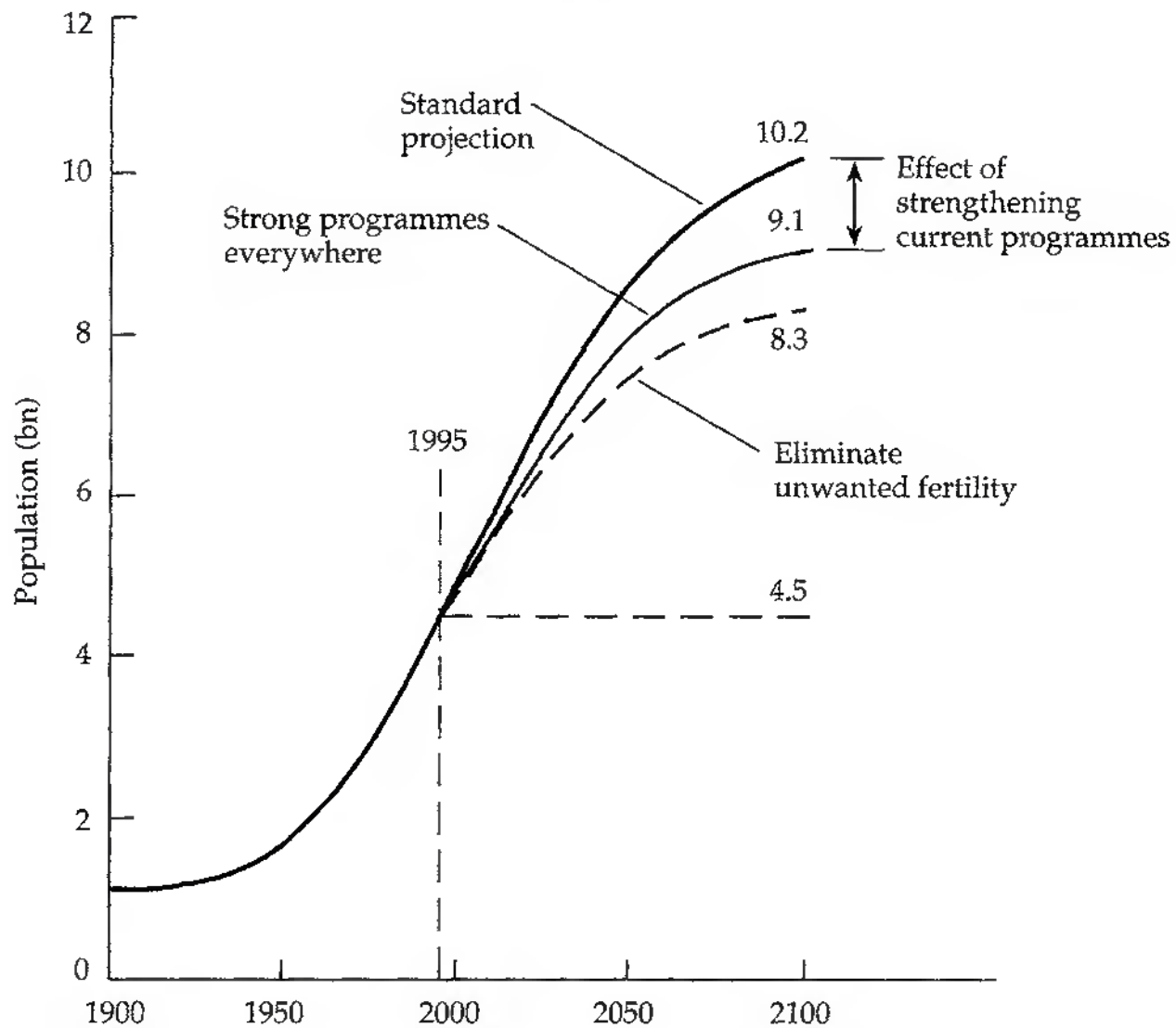


FIG. 18.6 Alternative projections of the population size of the developing world

Source: Bongaarts (1994a).

changes in the timing of the fertility transition, and that programmes can exert strong leverage over future population growth.

Changes in the future population trajectory of the developing world can therefore be achieved by improvements in existing programme efforts. Bongaarts (1994a) estimated that, if all unwanted fertility could be removed after 1995, future population growth in the developing world would further slow and the LDC population total in 2100 would be 1.9 billion lower than the 10.2 billion that is currently projected. Since in practice unwanted fertility cannot be reduced to zero, the additional impact on future population growth of implementing strong programmes everywhere is likely to be smaller and amounts to about 1.1 billion by the year 2100 (see Fig. 18.6).

These findings lead to the same conclusion as reached in the preceding fertility analysis: for the developing world as a whole, past programme efforts have had a substantial impact on population trends, while additional efforts will have a more modest, but still significant, effect. In countries where programmes are still weak or non-existent, the implementation of a vigorous programme can be expected to lower the population trajectory substantially. Generally, this effect should be of the same relative order

of magnitude as estimated for the developing world; i.e. with a strong programme implemented early in the transition, eventual population size can be expected to be more than one-third below the total obtained in the absence of programme effort.

The projections in Fig. 18.6 also indicate that the population of the developing world is likely to double in size (from 4.5 to 9.1 billion) even if all countries implement strong family planning programmes immediately. The key causes of this additional growth are high desired family size and population momentum. A comprehensive population policy should therefore include measures to address these causes. Demand for small families can be increased by raising levels of education and reducing gender inequality and child mortality, and population momentum can be slowed by raising the age of first birth and by addressing the needs of adolescents. Bongaarts (1994a) provides a fuller discussion of such an expanded population policy agenda.

NOTES

1. The regression equation is as similar as possible to the one used by Pritchett (1994a). The only differences are that unwanted fertility is the dependent variable and data are restricted to the 1980s. Adding other social and economic indicators as explanatory variables does not significantly change the coefficient for FPE. Adding an interaction term improves the overall fit of the model (data not shown). The fertility impact of a given programme effort is likely to vary according to socio-economic conditions, but available data are insufficient to estimate this variation.
2. For the developing world as a whole, unwanted fertility is estimated at 0.68 birth per woman (20% of 3.4). Reducing unwanted fertility outside China to 0.4 birth per woman would lead to an average of 0.29 unwanted birth for the developing world as a whole if no unwanted childbearing is assumed in China (which has 27% of the LDC population in 1995). Implementing strong programmes would therefore reduce average unwanted fertility from 0.68 to 0.29 birth per woman. This corresponds to a decline in overall fertility from 3.4 to 3.0 births per woman, if wanted fertility remained unchanged.
3. The reason that Caldwell's (1994) estimate is higher than that of Bongaarts *et al.* (1990) may be that he included spillover effects of the total global population movement on countries with weak or non-existent family planning programmes.

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