Chapter 3. Disciplinary perspectives on fertility behaviour

3.1. Introduction

What is the position of demography within the field of human sciences? How does the discipline deal with the basic issues and problems of social science? What are its contributions to the explanation and understanding of demographic patterns and change? What are the accomplishments in theoretically underpinning demographic forecasting and population policies? In general, what is the status of demographic theory? These questions are the concern of this chapter.

For many demographers the state of demographic theory is a matter of concern. Whereas there is an abundance of empirical data, and analysis can rely on a considerable set of advanced statistical techniques, the corresponding theoretical frame of interpretation is often inadequate. This inadequacy, if not absence, of sound conceptualisation impedes the accumulation of fundamental and useful insight into demographic processes. Accordingly, the poor performance in designing effective family planning and health programmes has been attributed to a considerable extent to deficient links with an appropriate body of theory.

The subject of this chapter is the current state of affairs with respect to demographic theory, at least as far as fertility is concerned. Others have undertaken similar excercises (e.g. Van de Kaa 1996, United Nations 1973, 1990), but this review differs to the extent that it evaluates the various theoretical contributions with regard to their usefulness within the perspective of the conceptual framework outlined in Chapter 2 and the theoretical starting points underlying this framework. Additionally, it wants to identify theoretical elements and elaborations that are missing in the envisioned comprehensive framework for which contributions might be found in other social and behavioural disciplines.

This chapter starts out with a general assessment of present demographic theory (Section 3.2.1), and gives an account of the selection and classification of theoretical frameworks to be considered in more detail and of the criteria for this evaluation (Section 3.2.2). These criteria draw on the starting points of a theoretical approach and a model of man appropriate for demography, as outlined in Chapter 2. This section is followed by the main part of Chapter 3 (Section 3.3), dedicated to the evaluation itself. The concluding part will recapture the main results by condensing the weak and strong points of existing conceptual traditions in demography and it will identify the theoretical lines on which the elaboration of the interpretative framework in Chapters 4 to 6 will draw.
3.2. The status of fertility theory

3.2.1. Janus-faced with little vision

An attempt to assess the state of the art of current demography will almost certainly leave an impression of ambivalence. On the one hand the discipline has accomplished a considerable level of sophistication with regard to mathematical analysis. On the other hand the theoretical foundation of demography as a behavioural science has only been poorly established (McNicoll 1992). Some demographers even state that the discipline tends to be a ‘tool kit’ rather than a substantive science (Livi-Bacci 1984a, Taeuber et al., 1978).

The representation of the subject matter of demography as being arranged within a sphere with a hard mathematical core and a softer surrounding of an explanatory body of theory (Schofield and Coleman 1986, Caldwell 1996), reveals the relation between these two faces of the discipline. The central core consists of models and techniques to estimate and statistically analyse demographic phenomena. It has shown the ability to provide an adequate description of the size, composition, distribution and rates of populations and some of the principles of their dynamics, as well as the historical depth necessary to perceive trends (Lee 1990).


The theoretical accomplishments are, however, much less impressive. They amount to an array of ideas and approaches which are neither very coherent nor very complete. This ‘surrounding body of theoretical propositions’ is necessary to provide a framework to interpret descriptive results as well as to conceive answers to the questions of why a found phenomenon occurs, why certain behaviour happens to occur in a particular patterned sequence, relative to other behaviour, and how this might change, given certain conditions. Some theoretical basis is indispensable for any scientific endeavour, since it provides the directions of what exactly to look for in the process of explaining fertility and how to interpret empirical data once they have been collected. Despite quite a number of valuable insights developed over the years, many demographers voice the complaint that by and large we still do not have a clear and comprehensive idea of why or how changes in demographic behaviour take place. Piles of statistics have been analysed, but little vision has emerged, at least little vision that pertains to and is applicable in concrete situations (e.g. Freedman 1987, Handwerker 1986a, McNicoll 1992, Ryder 1983). This status of demographic theory has serious repercussions on the ability to arrive at sound forecasts (Willekens 1990a, 1991) and to provide the underpinning for efficient and effective means for population policies (ESCAP 1993, Tsui et al., 1992, World Bank 1992). If this represents the status of fertility theory, it equally pertains to that of the theoretical body of demography generally.

The separate theoretical approaches to fertility that the demographic discipline has welcomed over the years each cover specific aspects of human reproduction. There is, however, no central paradigm which links all ideas together or which is able to relate individual behaviour to processes on population level. Again, this not only applies to the field of fertility, but also to migration (see e.g. Massey et al., 1993) and mortality (see e.g. Kunitz 1987, Wunsch 1995).

Little progress seems to have been made in the last decades if we compare contemplations with regard to the theoretical equipment of demography (Vance 1959, p. 296, Ford and De Jong 1970, p. 19-20, McNicoll 1980, p. 441, Schofield and Coleman 1986, p. 4, again McNicoll 1992, p. 405, Greenhalgh 1995b, p. 11). An important part of the problem seems not to be one
of a scarcity of ideas as much as one of ability or willingness to synthesise these into an organising conceptual framework. As generally encountered in social science, a considerable number of separate areas of investigation have each sought locally coherent theoretical models without displaying an intention to consider integration with adjacent fields (Munro 1992). Such a situation, characterised by partial and competing theories, may be typical for behavioural sciences in general, micro-economics being perhaps a notable exception (although institutional economics is now seriously challenging the neo-classical paradigm). But demography is even deprived of the centrality of a specific starting point that dominates and unites other sciences, like that of the individual, contextual definition, scarcity, physiology or a methodological starting point. More than probably any other social science, demography is identified and demarcated by its subject matter (population and population change) rather than by conceptual premises of how to study it. It is the specific character of certain phenomena (fertility, mortality, migration, nuptiality), constituted of specific events (births, deaths, residential moves, marriages), rather than the specific approach to explain them that distinguishes demography as a separate discipline. One property these events do have in common is the quality of being turning points in life, and to a lesser extent their age specificity. Levinson and Gooden (1985), studying behaviour from a life-cycle perspective, refer to demographic-type events as those that give shape and substance to the individual life course. They are time and energy consuming, involve high commitment and generally tend to dominate developments in other spheres of life. The occurrence and timing of these events imply major life choices and are often extremely stressful because they may involve high degrees of uncertainty, and compelling and far-reaching consequences, both in range of behaviour and in time perspective (cf. Birg 1990, Birg et al., 1991, Van Luijn 1996). The series of in-depth interviews by Van Luijn (1996) with women who were considering having a child are very good illustrations of this specific character of demographic behaviour.

This focus on specific events to be explained, rather than on conceptual premises of how to explain them, resulted, according to Ryder, in a pragmatic and empiricist bias that has pulled demographers toward the study of available data sets, often produced for non-scientific purposes, and typically multi-disciplinary, if not non-disciplinary, in design (Ryder 1983, p. 16). This reflects the context of Keyfitz’ remark that “demography [...] has withdrawn from its borders and left a no man’s land which other disciplines have infiltrated” (Keyfitz 1984, p. 1). Because of the unbiased focus, it is possible to cover under the umbrella of demographic theory a multitude of theoretical approaches originating in other disciplines: anthropology, biology, psychology, economics, sociology, history and medical science. It also indicates that the development of the theoretical instruments to understand population issues is beyond the scope of demographic concern alone and that in this respect demo-graphers have to draw upon other disciplines that attend human behaviour (Davis 1990, Hawley 1980, Lesthaeghe and Moors 1992, Morrison 1988, McNicoll 1992, Schofield and Coleman 1986).

This does not mean that social demographers need to take for granted an indiscriminate intrusion of neighbouring sciences into their field of action. They must keep in mind the demographic specificity of the phenomena to be explained, which may render certain approaches more relevant than others. But it is the interdisciplinary character of the explanation that requires them to keep up with what neighbouring sciences have to offer and to be susceptible to developments at the frontiers of knowledge in these fields. This seems hardly the case, however (cf. Billssborrow 1989, Greenhalgh 1996, McNicoll 1992). The application of micro-economics theory has largely stuck to the new-home economics of fifteen to wenty
years ago and there seems to have been little development in psychological theorising in
demography, since the emergence of the ‘value-of-children’ concept in the 1970s and the early
applications of the Fishbein-Ajzen kind of attitude models. The notion of culture in
demographic studies is notoriously reduced to austere proportions if it is conceptualised at
all) and is still a long way off from the evolution of cultural understanding in the last decades
learning theory and cognitive sciences in general have hardly touched the work of
demographers or have only recently entered the field (Burch 1980, McNicoll 1992). Some
theoretical traditions like phenomenology, holistic anthropological approaches have never
made it into the canonical streams of demography because they stand too far apart from the
positivist starting points of objectivity and quantification that are valued in demographic
inquiry. Moreover, apart from the newly emerging institutional approaches, the arena of
theories applied in demography remains divided into antagonistic micro and macro positions,
notwithstanding the developments in sociology and anthropology which substantially solved
the problem of structure and agency.

Despite these caveats and simplifications, the variety of theories and conceptual approaches in
demography form a basis for the development of a more encompassive interpretation frame.
The evaluation of the major lines of thought currently applied in the field of fertility (Section
3.3) identifies a number of promising elements and conceptual building blocks for this
framework. But on its own, a simple heaping of ideas, however relevant, will lead to nothing.
A conceptual framework which is capable of explaining demographic phenomena or, more
particularly, providing the scientific basis for fertility and health intervention programmes,
requires the integration of many conceptual considerations.

Several authors have acknowledged the partial and incomplete designs of existing approaches
and made substantial integrating efforts. Easterlin’s synthesis (Easterlin 1978a, Easterlin and
Crimmins 1985) tried to reconcile economic and sociological interpretations of fertility.
Starting from an anthropological point of view, Greenhalgh (1990, 1995b) and Handwerker
(1986a), among others, call for the establishment of links between micro and macro
1982, 1989) put forward an institutional approach to bridge the gap between individual
behaviour and the role of the embedding socio-economic and cultural environment. But, owing
to the diversity of disciplines involved in demographic theorising and their distinctive angles of
vision, in the end, even the most comprehensive synthesis will remain imperfect. Although a
‘grand unifying theory’ of demographic behaviour is at present far beyond the capacities of the
discipline, the cumulative character of scientific endeavour continuously provides new stimuli
and possibilities for the process of reformulating and updating existing theoretical frameworks.
As the advancement of social science originates importantly in the division lines separating
disciplinary traditions, an interdisciplinary science like demography must be able to take
advantage of the rapprochement between several disciplines that increasingly can be observed.

3.2.2. Reviewing fertility theories

A review of fertility theories can develop in several ways and according to different criteria.
The total set of current fertility theories display a range of subject definitions, approaches,
starting points and abstraction levels as well as a varying specificity, scope and methodology.
The resulting theoretical landscape of fertility is a colourful and mountainous patchwork of ideas, often without much coherence or substantial cross-fertilisation. Leridon (1982) depicted the situation as a ‘cubist painting’, and in a recent overview of half a century of research into the determinants of fertility, Van de Kaa (1996) recounts it as an evolving story consisting of a series of sub-narratives from different disciplinary orientations (see also Greenhalgh 1996). With regard to the classification of theoretical approaches, one important and very obvious differentiation is that between micro and macrolevel theories. Hawley (Hawley 1980, p. 174) takes this as the major watershed in approaches to explain fertility, but most others discern these positions as well. Macrolevel approaches, like Malthusian and transition theory, refer to population characteristics in relation to macro-economic and political contexts and changes. They are concerned with phenomena of an aggregated nature and assumptions with regard to underlying human behaviour are few and often implicit. Sometimes the assumptions are not theoretically postulated, but are in fact inferences of empirically observed data. In micro-analytical approaches, like psychological and micro-economic ones, assumptions are mostly much more elaborated and explicit. The individual, as the basic element in explanation, is credited with certain characteristics, capacities and limitations. Although the disciplinary backgrounds induce marked differences in this conceptualisation, a common attribute is the relative autonomy of the individual and, therefore, the centrality of the notion of choice. Many other theoretical approaches do incorporate individual behaviour in the process of explanation without relying so much on the concept of choice or any behavioural theory. They explicitly situate behaviour of individuals or groups in the wider context and stress the importance of social phenomena, which may be as tangible as living arrangements or farming techniques, or as abstract as social norms or family systems. This theoretical area is notably occupied by sociological and anthropological orientations. The primary interest here is at the social level but for explanatory purposes connections to the individual level are often maintained. So in this respect they can be situated between micro and macrolevel approaches and may play an important role in linking individual behaviour to processes at population level. Furthermore, at each level fertility theories advance their own particular starting points, often rooted in theoretical traditions of disciplines adjacent to demography itself. The encroachment of these disciplines into the field of population studies provides the major colouring and relief of theoretical demography. This justifies the use of disciplinary backgrounds as the main classification principle to be used in the following review. This classification will not do full justice to the subtleties of and variations within various disciplines, nor will it meet the criteria of comprehensiveness and mutual exclusiveness. Whereas theory is considered an abstraction of reality, an evaluation of theories is an abstraction of abstractions. This necessarily implies a large amount of reduction, but it entails sufficient realism to represent the main messages propagated in the various theoretical orientations. Moreover, a disciplinary classification emphasises that the advancement of the study of fertility depends to a large degree on the developments and integration of neighbouring disciplines.

With respect to the evaluation of the different approaches, the points of reference draw on the elaboration in Chapter 2 of a realistic model of man for demography, and the components and starting points of realistic and comprehensive social theory. Specifically, this relates to the adoption of a microperspective, the interpretation and integration of micro and macrolevels (choice and context), the role of time as well as to the acknowledgement of motivation, the involvement of mental agency, broadly defined rationality, biological functions, personal
development and social embeddedness as fundamental aspects in the understanding of human
behaviour. Given the interest in the issue of family planning and reproductive health, the
overview considers developing countries in particular.
The following overview will not deal with theories and ideas put forward in the past but failing
to survive to the current body of thought about fertility. For an introduction to these notions,
some of which can be traced back to classical antiquity and to the ancient Chinese
philosophers, other sources will serve better (e.g. Bhende and Kanitkar 1992, United Nations
1973, Vilquin 1997). Nor will the evaluation go into the lines of thought that go back to the
more mathematical origins of the study of population patterns and dynamics, such as stable
population theory, the work of Lotka, model life tables, et cetera. The overview limits itself to
the social-theoretical constructs in as far as they have penetrated the canons of demographic
thought, although the perspective is now and then widened by the relevant background
provided by other disciplines considered.

3.3. Determinants of fertility theory

3.3.1. Malthus in the background

Several scholars can be identified to have addressed the subjects of population and fertility long
before Malthus wrote his various editions of Essay on the Principle of Population (United
Nations 1973). Their ideas and observations foreshadowed the development of many principles
of population, population growth and development, and often addressed the implications for
public policy, but they remained largely speculative and at a low level of generalisation.
Therefore, the publication of Malthus’ Essays at the end of the 18th and beginning of the 19th
century (see e.g. Malthus 1976) is generally acknowledged as the outset of modern
demography. Malthus was the first deal comprehensively with a concept of population that is
subjected to general laws regulating the factors of its expansion and decrement. Malthus’ body
of thought was clearly rooted in the political, economic, social and moral issues of his time.
The core of his first Essay on the principle of population (published in 1798) consists in the
idea that the capacity of human populations to reproduce is (in principle) unlimited and
proceeds with a geometrical ratio, while the capacity to produce the means of subsistence is
necessarily limited and increases at best in arithmic fashion. In subsequent versions of his
Essay, he further developed his theory and added various considerations.

Malthus considered a total population system which is inherently inclined to expand. His belief
that population and means of subsistence increase with different ratios implied that populations
will grow where food production increases, but that eventually they will face a level where no
more people can be sustained and any surplus population will die of starvation. Whereas
Malthus maintained that populations always tended to a maximum increase, they were limited
by the ‘positive checks’ of mortality. These positive checks not only included famine and
starvation, but also other ‘misery’, like epidemics, wars and plagues. In addition he conceived
of a number of ‘preventive checks’ which operated through people’s voluntary acts to limit
their number of children. The major principle Malthus saw in this respect (although it
surprisingly only appeared in his later writings) was deferring marriage or refraining from
marriage altogether. The other ‘moral restraint’ he acknowledged (sexual abstinence within
marriage) was considered ineffective because of the overpowering ‘passion between the sexes’. Malthus’ world view (particularly as that of a clergyman), was violently opposed to other means of birth control, like abortion and contraception. The political implication of his view which has been a controversial theme in demography ever since) is that famine, war and epidemics disproportionately affect the lower classes of society and that it is primarily these classes that should be persuaded to control the size of new generations.

History has proved certain initial assumptions of Malthusian population theory to be too simple or incorrect. Since its inception, the Malthusian project has been often and severely criticised on empirical as well as ideological grounds, and indeed is still the subject of heated debate among scientists and policy makers (cf. Rothchild 1995). One of the main lines of attack concerns Malthus’ assumption of the capacity to increase agricultural output. Preceded by many others, Ester Boserup’s orientation is a main contender of Malthusian theory. She advances that technological progress might keep food production ahead of population increase (e.g. Boserup 1981). In her view, population growth, and particularly increasing population density, is a main stimulus to innovative techniques in agriculture. Moreover, she reverses the Malthusian logic by suggesting that technological progress only occurs under pressure of population growth. In this respect, Boserup is part of the political-scientific spectrum that put its faith in technological progress and the feasibility to replace conventional natural resources with other, possibly renewable, ones (e.g. J.L. Simon 1977, National Research Council 1986). In other publications Boserup elaborated on the intricate links between technology and fertility, asserting that modes of production have far-reaching effects on marriage patterns, gender relationships and reproduction (Boserup 1970, 1990).

Also the predominant role of positive checks in population control has been questioned. From a conference on population and biology, Livi-Bacci (1984b) concludes that although the level of nutrition is closely connected with the incidence and gradient of infectious diseases, it “... is not the sole determinant of the level of normal mortality since the social and environmental setting has often preponderant influence”. Bideau (1984) refers to studies which show that in former times mortality was the main element in population dynamics, but that is was independent of the available resources. In fact, population is not ‘necessarily limited’ (Malthus 1976, p. 56) by a scarcity of the means of subsistence. It is limited by whatever contributes to mortality, such as wars, epidemics, but also overeating, alcohol consumption, smoking, or whatever else one can think of to die of (Davis 1990).

Another shortcoming of Malthusian reasoning is its failure to distinguish the power of populations to increase from their tendency to do so. Many anthropological studies (e.g. Bledsoe 1990, Howell 1979, 1986, Kreager 1982, 1986) have shown that populations have a large variety of mechanisms at their disposal to keep population size in accordance with the carrying capacity of their environment, ranging from marriage patterns and migration, to contraception and child fostering. However, this is an adaptation of the Malthusian scheme of balancing population and subsistence rather than a rejection, and in this respect Malthus’ ideas remain an important background of fertility analysis. A more fundamental refutation of Malthus’ idea that populations always tend towards the limits set by subsistence is implied by the presently observed near zero or sub-zero population growth in most of the highly developed countries. The means and motivation for fertility control takes completely different forms and is much more diverse than Malthus had envisaged or considered acceptable. For one thing, the explanation of fertility requires much more than its relationship to income and food supply: people do not live simply to sustain themselves. Instead they have a complex
motivational structure, socially and culturally inspired, that has decisive impact on the level of fertility in a population (Davis 1990, Ní Bhrolcháin 1993).

The consideration of the consequences of present fertility on the subsistence of future generations, which Malthus had in mind when he referred to ‘preventive checks’, has probably never been a main or even an important argument to adjust reproductive behaviour, at least not from the individual point of view. It is extremely naive to think that a majority of individuals have been or ever will be primarily dedicated to maintaining a demographic balance at the population level (Blake 1994). Arguments that do play a role are usually not directly responsive to societal needs, but are concerned with needs at the individual or family level (cf. Bideau 1984), in some cases leading to situations analogous to Hardin’s ‘tragedy of the commons’ (Hardin 1968). Even if the overall effect threatens the general well-being, as long as a person’s gains from high fertility exceed the losses within his or her individual perception, he or she will not prefer few children. Sometimes, even, people’s faith in large families is reinforced by their grim prospects due to over-exploitation of their resource base with, at the same time, the stifling poverty that compels them to exploit it so unsustainably. This leaves them in a downward spiral of ever tightening constraints (Myers 1992). When Malthus himself addressed the discrepancy between individual and societal interests, he essentially pointed to man’s physical drives as being potentially contradictory to the needs of society. Although he acknowledged that “every voluntary act is preceded by a decision of the mind” (Malthus 1976, p. 88) and even that people may be perfectly aware of the negative societal consequences of their actions, he discarded the notion of man as a rational agent capable of controlling and adapting fertility behaviour to personal needs. Clearly, in his view sexual drives and even morality in terms of unacceptability of practices of birth control within marriage) are deterministic factors, rather than considerations that enter a decision making process.

Although the causes, consequences and remedies of Malthus’ population problem have been rephrased in different terms, his outlook on expanding populations constantly permeates into thought on moral and developmental issues. The essence of the problem is the judgment of whether fast growing populations lay too much claim on scarce resources to be able to secure a future existence for all, even if it is recognised that technological innovations keep on pushing up the limits of population growth. The Mathusian perspective is well in line with Myrdal’s (1968) view on development in Third World countries, as being hampered by large and fast growing populations. It provided the consideration for the inception of massive population policies of countries such as China and India, which were concerned about restraints on food production, land availability, employment and the enormous financial burdens of health and educational services. More recently, faced with a unprecedented population growth in combination with stagnating economies, governments in Sub-Saharan Africa have similarly turned to consider, and in some cases adopt, new policies designed to reduce high fertility. In the 1970s the reports to the Club of Rome aroused world-wide public concern for pollution and the exhaustion of non-renewable sources of energy because of high consumption patterns and population growth (e.g. Meadows et al., 1972). More recently the implications of Malthusian principles have been addressed in the broader perspective of sustainable development with regard to global warming (Flavin 1989), water scarcity (Falkenmark 1990), soil erosion (Brown 1989), global deforestation (Myers 1990), et cetera.

The contribution of Malthusian thought also in its newer versions to fertility theory is clearly
limited to the macro level. The explanation of population is phrased in terms of an equilibrium system of production and reproduction. Without the operation of preventive checks, equilibrium is forcefully maintained by surplus mortality that destroys the population generated above subsistence level. In reality the preventive checks comprise more strategies than the marriage valve Malthus postulated (or considered acceptable). They involve various mechanisms through which populations adjust fertility, nuptiality, migration and mortality to the environment and the level of technology (D. Coleman 1986, Livi-Bacci 1984b).
Formulating these homeostatic or auto-regulating principles at the population level, the theory fails to provide the links to the level of individual behaviour, where these feedback mechanisms must be anchored. It may be a correct observation that under impact of social forces individual preferences are phrased in terms that coincide with demographic homeostasis. But it takes a whole lot more to establish the causal mechanisms underlying the relationship, even if the influence on individual behaviour is not already exhaustively explained by more immediate interests of others (cf. Lesthaeghe 1980). This interpretation and the identification of conflicting interests in the social arena, is in line with the Merton’s modification of Parsonian functionalism (Merton 1968). In showing that a social construct may have positive functions for some actors and dysfunctions for others, Merton refocused attention on actors. And in showing that the construct’s continuation was contingent on actions of those actors for whom it had positive functions, he reintroduced a purposive actor and sought explanation for a social configuration in its proximate causes rather than in its consequences, thereby removing the homeostatic principle of functionalism (J.S. Coleman 1986, p. 1311).

In his attempt to detect the principle laws of population, Malthus had little eye for the role of individual behaviour. Where people come into the picture they are almost mechanically torn between their passion for the opposite sex, socially imposed control of fertility and starvation. There is no basis for understanding people’s strategies and considerations with respect to fertility or for an explanation of the large variety of reproductive patterns within similar environmental constraints. Also, there is little scope for elaboration of the social, economic, cultural and political context besides fertility checks and level of sustenance. As one of the earliest critics of Malthus already remarked (cf. Rothchild 1995), Malthusian reasoning fails to distinguish the power of a population to increase and the tendency in population to increase, and particularly so, it would seem, because it does not acknowledge the mechanisms of individual behaviour formation. Therefore, Malthusian theory cannot be considered a suitable conceptual basis for the understanding of fertility or the practical recommendations of population programmes. However, it remains a valuable tradition in the sense that it sketches a background considering the question about the possible limits to population growth and the role of externalities of high fertility.

3.3.2. Transition theory: a demographic love-hate relationship

The remarkable occurrence of fertility decline, in the past as well as in the present, has puzzled demographers and social scientists generally and has urged them to look for law-like principles underlying the fertility changes. The resulting theory of demographic transition has become the leading body of thought in social demography. In fact, as the theory has provided a framework for the scientific study of fertility, it might be considered as a demographic paradigm in the sense that other conceptualisations in demography deal with part of the total explanation of the generally observed trend from high to low fertility (Beaver 1975, Van de Kaa 1996, Kirk 1996). This predominant status that the theory has acquired probably results from it being one of the very few ‘stylised facts’ demography has to offer with regard to fertility change. Moreover, it has some general appeal because of the global perspective it provides.

The apparent process of demographic transition proceeds in the course of modernisation and economic development from a situation characterised by high mortality and high fertility to one
where mortality and fertility are low, via a stage with declining death rates and declining birth rates lagging behind. This notion of demographic transition gained full momentum only after the seminal publications by Davis (1945) and, particularly, Notestein (1945), although the full essence of the contingency between modernisation and declining mortality and fertility, as well as the three-stage evolution had already been comprehensively formulated by Thompson in 1929. The major elements had also been addressed by Landry (1909, 1934) and in the ethnographic wealth of the work of Carr-Saunders (1922, 1964/1936).

The classic representation of the demographic transition, as for instance sketched by Notestein, claimed that mortality declined in the wake of the industrial revolution, which brought material changes in the sense of agricultural innovation, better communication, higher productivity and improved health conditions. Fertility was much less responsive to such modernisation and its decline depended to a large extent on the collapse) following mortality decline) of economic, ideational and normative systems that supported high fertility.

In the past decades, what started out as a mere description or explanation of historical trends of mortality and fertility in Europe has become increasingly elaborated and has incorporated additional considerations, like different conceptualisations of modernisation and the shift from socio-economic to cultural-ideational and psychological determinants of fertility decline. The principles of historical demographic transitions were thought to be applicable to any contemporary situation in the sense that every nation, region or population could be located on the evolutionary track of modernisation and decline of mortality and fertility. Other notions that transformed from empirical observation to theoretical assumption posit that a substantial mortality decline invariably precedes a major decline in fertility, that the mortality decline is inevitably followed by reduced fertility and that once a substantial fertility decline has been established, the process is irreversible and inescapable. In these respects, the notion of demographic transition can increasingly be considered as a theory with universal validity and also with predictive power. Whereas even today there is no agreement about the theoretical status of the concept of demographic transition, it is worthwhile mentioning that Kirk, another demographer who contributed to its initial formulation, claims that neither Notestein nor Thompson initially thought of their ideas as a theory (Kirk 1996).

The notion of demographic transition met substantial criticism, even among its adherents. In 1973, for instance, at the onset of a massive project to underpin the transition theory, Coale identified the strength and weakness of the theory. Thirteen years later, in what can be considered the last monument to date in the tradition of the demographic transition theory, Chesnais (1986) had to phrase Coale’s remarks in almost identical terms.

"the power of the demographic transition concept (...) lies in the undeniable fact that with sufficient modernization fertility and mortality change in a predictable manner...”.

But the weakness of the concept, according to Coale, is

"... the difficulty of defining a precise threshold of modernization that will reliably identify a population in which fertility is ready to fall ..." (Coale 1973, p. 64).

Coale and his associates from Princeton University tried by means of a large-scale survey to identify the crucial variables that had determined the onset and pace of Europe’s fertility transition. Their attempt failed in the sense that their study could not find any socio-economic
indicator of modernisation that could unequivocally explain the occurrence of fertility decline in Europe (Watkins 1986). Socio-economic factors, which were emphasised by transition theory, appeared to be either spurious or inconsistent in the explanation of the timing of the decline or its rate. The simultaneous fertility decline in Hungary and England is a case in point, as in terms of socio-economic indicators, Hungary lagged far behind England, at that time economically the most advanced nation in the world. Also, the early transition which occurred in Bulgaria, in spite of its low level of development, has been interpreted as being in conflict with the canons of demographic transition theory (cf. Kirk 1996, p. 383). With regard to contemporary societies, China, Kerala State and Sri Lanka may also serve as illustrations, as fertility there is near or even below (Kerala) replacement level without meeting the assumed requirement of socio-economic development. Bangladesh, one of the least developed countries in the world, is another good example, given the significant fertility reduction observed there. Evaluating the contemporary record on the onset and pace of the fertility transition, Bongaarts and Watkins (1996) also found an enormous diversity in each of the socio-economic indicators applied, confirming the conclusions of the Princeton study of historical Europe.

A major result of the Princeton study, besides the failure to find prerequisite socio-economic conditions for the fertility transition, was the identification of cultural factors as main determinants of fertility decline (Watkins 1986, Knodel and Van de Walle 1979, Van de Walle and Knodel 1980, Lesthaeghe and Wilson 1986). Thus, Lesthaeghe’s study of fertility decline in Belgium showed a clear demarcation of fertility patterns and levels along language lines for communities which were otherwise socio-economically very similar (Lesthaeghe 1977). Analysis of the World Fertility Survey by Cleland and others (Cleland 1985, Cleland and Hobcraft 1985, Cleland and Wilson 1987) as well as other studies by Lesthaeghe and co-workers (e.g. Lesthaeghe 1983, Lesthaeghe and Meekers 1986, Lesthaeghe and Moors 1992, Lesthaeghe and Surkyn 1988a) found ‘culture’ to be the single major factor influencing the timing of fertility transition. Central to the work of Lesthaeghe on demographic change in Western Europe is the importance of ideational shifts that are not necessarily concurrent with economic modernisation. Similar ideas have been expressed in publications on other historical and contemporary situations (e.g. Alter 1990, Greenhalgh 1989, Handwerker 1986a, Inglehart 1977, 1990, Stamm and Tsui 1986). Work by Caldwell and Caldwell (e.g. Caldwell and Caldwell 1987) suggests that fertility levels in Sub-Saharan Africa will not approach replacement level for a long time, if at all, and that this will depend on cultural factors just as much as on socio-economic ones. Generalising from his wealth flows theory, Caldwell argues that fertility decline depends on a social revolution (basically, a change of family relationships) which is not necessarily accompanied by economic modernisation (Caldwell 1982, p. 153). Although many of these authors do not necessarily reject the interpretation of classical versions of demographic transition theory, they do find it important to emphasise that the forces underlying a demographic transition not only involve changes in material conditions and in the social division of labour and resources, but also involve important changes in the sociocultural meaning of children and reproductive behaviour (cf. Mason 1992, p. 2).

The sequence of mortality and fertility decline that the theory of demographic transition presupposed has also been called into question. In a historical perspective, France is the classic example of analysis contradicting the idea that mortality decline preceded fertility decline (E. van de Walle 1978). Evidence from the Princeton study suggested that France was not an
isolated case, and there is no statistical evidence for a general trend in the sequence of mortality and fertility decline (F. van de Walle 1986). Sometimes fertility decline was found to follow a fall in infant mortality, sometimes it preceded it, often they dropped simultaneously. Chesnais, however, argues that some of these findings are based on methodological inadequacies and in the second instance results appear to be in accordance with the theory (Chesnais 1986). Nevertheless, the exact causal relation between the decline in mortality and fertility remains difficult to establish (cf. Van de Kaa 1996, p. 409).

Although the theory of demographic transition suggests a historical perspective, the construct is largely devoid of time and change except for the intermediate stage of transition (cf. Greenhalgh 1995b). In the framework of transition theory, there is no history in either the pre or the post-transition stage: in terms of development, time stands still. According to Greenhalgh, many descriptions and analyses of fertility within the perspective of transition theory exist in historical vacuums and are not guided by the notion that the specific histories of the social environment can bear much relevance to their fertility patterns (Greenhalgh 1995b, p. 20; cf. McNicoll 1994). The suggested homogeneity and immobility of ‘traditional’ societies (historical or contemporary) is indisputably refuted by the empirical demographic record, which shows a large variety of fertility patterns and levels (Blake 1994). Neither could transition theory adequately cope with the significant (although temporary) posttransition, post-war reversal of fertility trends in a number of Western countries, which resulted in the ‘baby boom’ cohorts. To dispose of such phenomena as ‘temporary blips’ (Kirk 1996, p. 382), is totally unsatisfactory and unacceptable given the huge impact they can have on society. Also, to find solace in an equilibrium or homeostatic framework, as Kirk suggests, to take account of the problem of where the fertility decline will eventually end, probably reflects more normative hope than a realistic forecast. The observation that in most European countries fertility dropped below the level of mortality (where transition theory assumed it to end) and a supposed historical inflection point in European society, inspired the conceptualisation of a ‘second demographic transition’ (Lesthaeghe and Van de Kaa 1986, Lesthaeghe and Verleye 1992, Van de Kaa 1987). This does not, however, resolve the problem of conceiving society and demographic systems in terms of continuous development.

The sketch of the demographic transition against the background of modernisation and social development, and the notion of invariant stages, relates the theory to the broader paradigm of evolutionism. Much of the criticism on demographic transition theory resembles the arguments in the raging debates in anthropology on the validity of general evolutionary theories (cf. Sahlins and Service 1960). Nineteenth-century anthropological evolutionists like Morgan and Tylor advanced notions of unambiguous developmental stages which are characterised by successive types of social institutions, such as marriage, religion and political organisation (e.g. Morgan 1964, Tylor 1881). In their perspective, peoples in non-Western societies were ‘contemporary ancestors’, bound to evolve eventually into European-style modern man. The critical response to this cultural evolutionism, on the other hand, emphasised the multi-linearity of evolution and the historical uniqueness and functional performance of societies (e.g. Boas 1963, Radcliffe-Brown 1952, Wertheim 1972), a perspective which is easily recognisable in reactions to demographic transition theory. Greenhalgh, among others, raised similar contempt with regard to overdue generalisation, eurocentrism and supposed unilineality of development (Greenhalgh 1989, 1995b, cf. Handwerker 1986b). Although the concept of demographic transition (or its fertility transition subset), if seen from sufficiently afar, stands better against
the empirical record than comparable evolutionary thought in anthropology, closer scrutiny supports this criticism: there seem to be many roads to lower fertility, and neither the onset nor the pace of the decline cannot be predicted anywhere near satisfactorily. This confirms the truth of Greenhalgh’s statement “... that the closer we get to understanding specific fertility declines, the further we move from a general theory of fertility transition” (Greenhalgh 1990, p. 85), and it tempts the reformulation of the label ‘transition theory’ as a ‘bag of transition theories’ (cf. Alter 1990). Therefore, the practical content of transition theory (either in terms of revealing the specific determinants of demographic change or in terms of providing tangible handles on population policies) is less than it initially promised to be. Szreter, in this respect, reflected that

“... the principal virtue and function of the idea of demographic transition has always been in providing a graphic metaphor that summarily describes - and predicts - a long-term overall emergent pattern of change. As such it has enormous justificatory, motivational, and communicative value for agencies and institutions wishing to effect change. But, ... a summary description of this metaphorical sort offers no necessary assistance or insight into the causal explanation of how such change occurred or occurs in any particular case” (Szreter 1993, p. 692).

Another weakness demographic transition theory has in common with the grand tradition of evolutionism is the sometimes presumed distinction between traditional and modern people. In some cases the concept of the person populating pre-transitional societies (historical societies, contemporary developing countries) is cast in terms of passive receptors of culture and normative rules, and those inhabiting post-transitional societies (modern, Western countries) as active and independent decision makers (cf. Greenhalgh 1995b, p. 19). In line with this assumption, ‘modern’ persons are sometimes attributed with the capacity for rational thought and behaviour, while ‘traditional’ people are assumed to be guided by irrational beliefs. Such assumptions should be rejected on the basis of the fact that in Western societies, too, despite a high level of individual freedom, people are structurally embedded in their social and cultural environment (individual freedom in fact being an expression of it), or that in high-fertility societies reproductive behaviour may very well be deliberate and rational, given its function to the individual in terms of social approval, support, survival, sanctions and lack of alternative strategies (e.g. Blake 1994).

Over the years, the theory of demographic transition has incorporated a number of additional ideas to remedy some of its shortcomings. These efforts have been especially related to the undue emphasis on socio-economic development as the propellor of demographic change. The accommodation of culture in more recent versions of the theory is a case in point. In the wake of the new attention for ‘culture’, the concept of diffusion sailed into the theoretical edifice of transition theory. Both culture and diffusion have subsequently been developed as the core concepts of new branches of fertility theory (cf. Sections 3.3.6 and 3.3.7).

To many researchers, the main problem of demographic transition theory remains its very general level. In a grand perspective, spanning a period of perhaps two centuries, it provides an appealing conceptual background, capable of incorporating a large number of ideas that play a role in demographic change. If an explanation and understanding of the levels and trends in fertility in specific circumstances is sought, the value of the theory is very limited. Although many social demographers are in principle sympathetic to the quest for general principles
underlying demographic change, they draw attention to the position that different combinations of factors are likely to lie behind the fertility decline in different settings. What they need in order to explain and predict population development or design population policies, is specific knowledge of particular settings and the mechanisms of social change and structure-agency interaction at work there (Greenhalgh 1990, 1995b, McNicoll 1992, 1994, Szreter 1993, Teitelbaum 1976, Willekens 1990a, 1990b). No policy aiming at effective family planning and health programmes can rely on general formulations without a careful assessment of the local circumstances. Experience has taught us to be sceptical or at least cautious with regard to the applicability of effective population strategies in different settings across countries, across continents and even within countries (e.g. Hull 1986, Caldwell and Caldwell 1988, Warwick 1988). The required knowledge is not adequately provided in the transition framework; neither in terms of its representation of the relevant social and cultural configuration in which reproductive behaviour takes place, nor in terms of the evolution and historical antecedents of this context, nor in terms of its representation of how individual agents are influenced and construct their behaviour in this context. Although certain formulations within the mainstream of demographic transition theory try to get down to the individual level, the concept principally remains at the macrolevel and never incorporates the microfoundations of social theory.

3.3.3. Biological specifications of reproductive behaviour

While fertility is crucially embedded in the social and cultural environment and depends on many individual factors, it is basically a biological phenomenon that includes fecundity, conception, gestation, foetal mortality and birth. A notion often associated with the transition from high to low fertility is the idea that in the post-transition stage, fertility is under complete control of couples and individuals, while in the pre-transition stage it is to a large degree left to such biological principles, although constrained by socially constructed bounds. This notion was already conceived in the work of Landry, but the analysis of fertility in pre-transition populations has immensely improved by Henry’s (1953) development of the concept of ‘natural fertility’ and by the formulation of the models of intermediate determinants (Bongaarts 1978, Davis and Blake 1956).

Louis Henry defined the concept of natural fertility as fertility that existed in the absence of deliberated control through abortion or contraceptive practice, implying that reproductive behaviour does not depend on the number of children already born to a couple. In these natural fertility situations, reproduction is determined by biological principles, such as age at menarche, fecundability (the monthly probability of conception), the time required for gestation, intra-uterine mortality and postpartum amenorrhoea. In addition, fertility is determined by a number of social-behavioural factors, which are at least from the point of view of the couples concerned) not intended to restrict childbearing. These factors might include marriage patterns (in particular as far as related to marital duration), spousal separation and (religious) rules for sexual abstinence in certain periods, and duration and intensity of breastfeeding, with its effects on the period of post-partum amenorrhoea. The importance of biological factors in relation to these social factors is somewhat subdued, since the observed levels of natural fertility differ widely between societies precisely because of the wide differentiation in these social mechanisms (Blake 1994). Moreover, a weakness of the natural fertility concept is that it is not always easy to establish whether behaviours are socially or
individually determined, and whether birth control considerations are involved or not. Thus, even where people may want to abstain from sexual intercourse on the basis of normative rules, the efficacy of this may depend on motives of child-health, birth spacing and, for that matter, limitation of offspring (cf. Caldwell, et al., 1982b, Kakar 1989, Knodel 1983).

The concept of natural fertility has evolved over time (Henry 1957, 1961, Leridon 1977, Leridon and Menken 1979), and found its culmination point in the model of proximate determinants as developed by Bongaarts (Bongaarts 1978, Bongaarts and Potter 1983). Earlier, Davis and Blake had provided a seminal contribution with the development of an analytical framework of intermediate determinants of fertility which affected either the exposure to intercourse or the exposure to conception or gestation and successful parturition. Divided over these three categories, they identified eleven behavioural and biological factors “...through which, and only through which, any social, economic and environmental variable can influence fertility” (Davis and Blake 1956, p. 214). Bongaarts further developed this into a simple but powerful framework by quantifying the effect of Davis and Blake’s intermediate variables and collapsing them into eight, and later seven, proximate determinants of fertility. This resulted in a simple but powerful model for analysing how fertility changes over time or differs from one group to another: any level of fertility in a population can always be traced to variations in one or more of the following determinants:

- the proportion of women of reproductive age who are married (as a measure of the proportion exposed to sexual intercourse);
- the use and effectiveness of contraception;
- induced abortion;
- post-partum infecundability (as primarily determined by the duration and intensity of breastfeeding);
- the frequency of intercourse (including the effect of temporary separation and abstinence practices);
- the onset of permanent sterility (particularly as related to menopause);
- spontaneous intra-uterine mortality.

Each of these factors contributes to a reduction of the approximately fifteen children a woman can have during her reproductive career. Any level of fertility in a population can always be traced to variations in one or more of these seven determinants. The empirical evidence showed that marriage, contraceptive practices, abortion and post-partum infecundability have by far the strongest effect on levels and differentials of fertility (Bongaarts 1993, Bongaarts and Potter 1983). The model of proximate determinants suggests, therefore, that the total fertility rate can be described as:

$$TFR = C(m) \times C(c) \times C(a) \times C(i) \times TF$$

where TFR is the total fertility rate, $C(m)$ is the index of proportion married, $C(c)$ is the index of non-contraception, $C(a)$ is the index of induced abortion, $C(i)$ is the index of lactational infecundity and TF is the potential total fertility.

The framework’s exceptional clarity and organisational power had an enormous impact on the research agenda of fertility studies particularly for developing countries, but also for historical
populations) and the World Fertility Survey and the Demographic and Health Survey provided the necessary data to apply the model in a comparative perspective. Apart from the identification of the proximate determinants, the significance of the model is situated in the structuring of attention and efforts in the search for the ultimate determinants of fertility and fertility change. Fertility itself is no longer the sole subject of research; in addition we need to look for the institutional and behavioural backgrounds of marriage, contraceptive use, breastfeeding, abstinence practices, et cetera. To cite Freedman, we are faced with “the challenge of specifying the determinants of the proximate determinants” (Freedman 1986, p. 30, cf. Hull 1983, 1987, Leridon 1982). Whereas any such attempt was completely absent in the work of Bongaarts, Davis and Blake in fact used their framework of intermediate variables as a starting point to determine and analyse the institutional factors affecting fertility. Their actual explanation of fertility rested on the comparative analysis of social organisation, which largely boiled down to an explanation in terms of family and kinship organisation. By their sociological approach, the model of Davis and Blake, more than Bongaarts’ later proximate determinants model, tries to establish the causal relations between levels of fertility and social changes as implied by modernisation theories like the demographic transition theory. Others, for example Lesthaeghe and collaborators (Lesthaeghe and Eelens 1989, Page and Lesthaeghe 1981), continued this tradition and tried to give some more body to the theoretical underpinning.

Although the popularisation of the proximate determinants model is mainly based to its application to developing countries, it is perhaps a mistake to presume that its value may be discarded completely for developed countries (Easterlin and Crimmins 1985). Although in Western countries fertility is considered to be under volitional control and childbirth to be a matter of demand rather than supply, it is worthwhile recognising that here, too, fertility not only depends on behavioural factors, but also on biological processes. The fertility outcome is merely a matter of shifted significance from biological to behavioural determinants or from some behavioural determinants (related to marriage and breastfeeding) to others (particularly contraceptive use and induced abortion). Moreover, Western countries are witnessing a growing concern with problems related to infecundity and infertility in relation to the generally observed rise in age at birth (e.g. Te Velde 1992). Until recently the main fertility problem was the control of unwanted childbearing and the attainment of a ‘perfect contraceptive population’ (Bumpass and Westoff 1970). Menken et al., however, reflected that

“With great effort, fertility has been ‘turned off’: people had come to believe that controlling fertility was the real problem and to expect that having children was easy”
(Menken et al., 1986, p. 1393).

Whereas Bongaarts’ model of proximate determinants, as well as the version of Davis and Blake, analyses fertility at the level of populations and societies, several researchers tried to translate it to the individual level. Hobcraft and Little (1984), for instance, calculate fecundity and fertility as the outcome of the fecundity-reducing effects associated with the particular set of states that describe women’s positions in their reproductive career (states related to pregnancy, absence from sexual relations, contraceptive use, post-pregnancy infecundity). Becker’s model of adolescent fertility (S. Becker 1993) specifies conditional probabilities of live birth, conception, and coitus on the basis of individual data. Hull (1983) explicitly incorporates the proximate determinants in a decision-making approach. The value of this integration is that fertility is not seen as the product of one single decision, but as the possible
combined effects of numerous decisions with regard to the proximate determinants such as marriage and divorce, contraceptive use, abortion, frequency and patterns of sexual intercourse, and breastfeeding practices. This reformulation represents a means to increase the relevance of the concept of individual choice for situations under conditions of natural fertility.

The Bongaarts model, even in its individual-level reformulation, gives no attention to the role of individuals and the behavioural processes that are involved, apart from the fact that it explicated the extent to which fertility is liable to behavioural influence or to which it is submitted to biological laws (Bongaarts 1993, see also e.g. Bongaarts 1984). A major cause of this is the prominence of physiological outcomes which relates more to the supply of than to the particularity of fertility consideration of demand for children (Leridon 1977, Bulatao 1983). There is no reference at all to aspects of intentionality, needs, motivation, expectation, adaptation and the working of social and cultural institutions which determine demand for children and control of births. As the supply of children, or fertility, is largely, and perhaps increasingly, a function of demand, the Bongaarts model in itself is not a sufficient theory of fertility. The same theoretical inadequacy applies to the comparable frameworks in demographic research with regard to health and mortality (e.g. Mosley and Cheng 1984, Van Norren and Van Vianen 1986). Attempts to deal with this problem of demand and with the challenge to specify the determinants of the proximate determinants by providing an understanding of behaviour and the socio-economic and cultural context is the realm of behavioural sciences rather than biology. The version of Davis and Blake is better positioned in this respect, as it relates the biological and socio-biological variables to the larger social and cultural context. However, it too lacks an explicit reference to any behavioural assumptions about the human agent.

The observation that in developing countries, too, the proximate determinants with the strongest impact are precisely those that are under behavioural control, be it individually or socially expressed (Bongaarts 1993, p. 18), signifies the need for additional social theory to assess how this control is asserted and the dynamics which cause fertility change. However, the models elaborated by Bongaarts and Davis and Blake provide an excellent starting point for population and health policies, as they indicate very clearly the immediate antecedents of reproductive outcomes which may serve as points of impact in population programmes (cf. Freedman 1987, p. 65, Shorter and Surayek 1985).

3.3.4. Choice and consumer durables: micro-economic theories

The writings of Malthus left their mark in the field of classical and Marxist economics in the 19th and early 20th century, and later in the economic analysis of population and development in less advanced countries, particularly in view of their unprecedented rates of population growth (cf. United Nations 1973). However, these macro-economic approaches never became standard material in demographic theorising, unlike the micro-economic orientations that firmly entered the field in the 1960s.

Fertility theories starting from a micro-economic perspective assume that decisions with regard to childbearing are principally analogous to the more usual consumer choices as far as the
implications of scarcity are concerned. Harvey Leibenstein (1957) may be called the progenitor of the view that the number of children is the result of individual decision making within an economic context of income and prices. Among others, Nerlove (1974), Willis (1973), Schultz (1981) and, most prominently Becker (G.S. Becker 1960, 1965, 1976, 1981, Becker and Lewis 1973, Stigler and Becker 1977) developed the consumer choice theory into what became known as the new home economics of the Chicago school. This micro-economic approach not only involves the traditional variables of income and prices, but also the quality of children and budget constraints in terms of allocation of time and opportunity costs. Given these variables, households are assumed to produce a bundle of consumer commodities among which children in accordance with the maximisation of household utility. The model links fertility decisions to other household decisions, including labour force participation and consumption. Children may be perceived in terms of costs, like actual expenses and foregone opportunities, and benefits as they can perform as inputs in household production functions which may, for instance, produce old age security, emotional rewards or an additional household income. The notion of child quality became a key factor in Becker’s work to account for the inverse relation between income and number of children as experienced in the fertility transition. This quality of children is assumed to be elastic with respect to income, while the quantity of children is not, implying that the desired number of children may fall as income increases because the average cost per child may increase even faster.

The economic approach to fertility has been challenged on several grounds. Part of the criticism can be traced back to the concepts of choice and decision-maker that underlie micro-economic theories: strongly individualistic, decontextualised, static, relying on a narrow, substantive notion of rationality and without a sufficient degree of (psychological) realism. Obviously, representatives of rival disciplines embark upon such general criticism, but it is also voiced by a number of (behavioural and institutional) economists themselves (e.g. H.A. Simon 1987, Lea et al., 1987, North 1994). Among the economists working in the field of demography, Leibenstein and Arthur share some of these concerns. Arthur, in a critical review of Becker’s Treatise of the Family, “call[s] for the use of rules, rights, agreements, hierarchies, organizational institutions) in short, structure” (Arthur 1982, p. 395). These remarks touch upon the neglect by most economists of the social, cultural and political environment of decision making. Choices are primarily seen as exercises of isolated individuals and little attention is paid to consideration of how the content and process of choice is influenced by the social structure of the environment, cultural meaning-giving systems, networks or institutions (cf. Langlois 1986c, North 1994). Leibenstein (1977, 1981, 1982) articulates that the concept of choice as used in economic choice theory is only selectively applicable in the study of reproductive behaviour, and much of the fertility outcome must be seen as the result of routine and rule following procedures (see also Lee and Bulatao 1983, Hollerbach 1983). With regard to the static nature of the new home economics, it can be observed that by and large economic analysis in demography does not allow for changes in preferences over lifetime as the result of learning and personal experience, and that it assumes couples to have defined these preferences at the onset of marriage (G.B. Simmons 1985, Siegers 1990). In this perspective changes in behaviour over time are considered to be the result of variations in restrictions facing the decision-maker. However, a number of economists provide a more dynamic perspective by applying a life cycle approach to fertility or accepting the possibility of preference shifts (e.g. Moffit 1984, Namboodiri 1980, 1983, Rosenzweig and Wolpin 1980, Siegers 1987, Turchi 1991).
What most other behavioural sciences find hard to take is the employment of the goal concept in economic argumentation. Economists who represent the leading economic research line in demography do believe that people act on a set of goals, but they usually cast it in the vacuous concept of utility maximisation. They remain silent on the underlying preference structure which is assumed to be stable over time and identical for all people, and they infer people’s preferences from actually observed behaviour which is assumed to be strictly dependent on situational restrictions (Stigler and Becker 1977). Other disciplines which deal with the explanation of human behaviour refute situational determinism and claim that restrictions are only part of the story. According to them, behaviour depends importantly on individuals’ beliefs and on their construction of goals and meaning of the situation. Procreation generally occupies an essential place in people’s world view and the meaning they give to their existence. From this point of view it is clear that there is no reason to assume a uniform preference structure across individuals and societies (Hannan 1982, Lesthaeghe 1983).

A common ground for much of this critique is located in the assumption of substantive rationality in economics. This focuses the concern more on the outcomes of choice than on the decision process by which they are reached (Hogarth and Reder 1987, H.A. Simon 1978). No room is then left for the processes by which individual decision-makers shape their preference structure and give meaning to behaviours, reduce available information to a limited number of salient considerations, select and apply decision rules and heuristics, and cope with uncertainty, dependency and social pressure.

The notion of child quality that is crucial to the new home economics interpretation of fertility is not free from controversy, either in terms of conceptualisation (e.g. Robinson 1997) or with regard to the assumption that all children born in a family embody the same quality. The last assumption is refuted by the empirical findings that the value of children may differ by parity (Bulatao 1981, Bulatao and Fawcett 1981, Namboodiri 1983) and by sex (e.g. B.D. Miller 1981, Koenig and Foo 1995, Nag 1991, UNICEF 1991).

Criticism of the new home economics approach to fertility also refers to the assumption of a single joint household utility function. For one thing, it assumes altruism (with which Becker (1981) tries to deal) and harmony on behalf of both partners, which does not seem very plausible as both power and the distribution of costs and benefits of children may differ substantially between them (Caldwell and Caldwell 1987, Fawcett 1983, Lee and Bulatao 1983, Siegers 1990, G.B. Simmons 1985). Economic decision making models are usually completely silent about the bargaining processes between parents that settle possibly conflicting interests with regard to progeny. In several societies, even the absolute authority on fertility decision making by the parents themselves may be seriously questioned (Khan and Singh 1987, Koenig and Foo 1992, Ryder 1983).

Furthermore, the definition of the household concept is notoriously difficult, not only with regard to relevant criteria, but also because of possible shifting and rotating membership of both parents and children. The Sub-Saharan African experience of the precedence of the larger family and lineage over the very weak conjugal ties between spouses (cf. Awusabo-Asare 1988, Caldwell 1982, Caldwell and Caldwell 1987) cast serious doubts on the relevance of the supposed household type in micro-economics. Likewise, the widespread phenomenon of child fostering, especially in West Africa (e.g. Bledsoe 1990, 1995, Page 1989), puts the standard economic view about direct and substitution costs of raising children in a different perspective.
Child fostering may have an impact, directly or indirectly, on fertility decisions, presumably because it reallocates the resources available for raising children within the society. As the number of children supported by parents at any specific point in time is not closely tied to biological parentage, different budget considerations will enter in the fertility decision making process than would be expected otherwise (Bledsoe 1990, Caldwell and Caldwell 1988, p. 24). Furthermore, child fostering may reduce opportunity costs and enhance female labour force participation (Isiugo-Abanihe 1985).

For these reasons, and because in many instances fertility is not a matter of demand but a matter of supply, the new home economics model is still relatively ill-suited for the analysis of fertility in developing countries (G.B. Simmons 1985, United Nations 1990; cf. Leibenstein 1981, 1982).

With regard to the neglect of supply mechanisms in the standard consumer choice theory and its new home economics version, a very important extension is provided by Richard Easterlin and collaborators (Easterlin 1975, 1978a, 1978b, Easterlin and Crimmins 1985, Easterlin et al., 1980). Easterlin’s approach complemented the strictly demand-oriented model of new home economics with notions concerning the production side of fertility as derived from the concept of natural fertility and the intermediate variables framework of Davis and Blake and that of Bongaarts. In this synthesising effort he brings together the scientific paradigms of economics and sociology; but this effort clearly should also be considered as an attempt to bridge the gap between fertility analysis in contemporary Western situations and that under non-Western or historical conditions. This Easterlin synthesis has gained wide acceptance in demographic research and provided the basis of the agenda of the U.S. National Academy of Sciences (Bulatao and Lee 1983). The model assumes that all determinants of fertility (public health, education, urbanisation, family planning programmes, et cetera) work through the categories of the demand for children (depending on household tastes for children and alternative goods, income, and costs and benefits of children), the supply of children (reflecting natural fertility determinants like exposure and frequency of intercourse, post-partum amenorrhoea, spontaneous intra-uterine mortality and sterility) and the costs of fertility regulation (lumping together attitudes towards and access to fertility control methods and supplies, as well as the time and money required to obtain the birth control methods). According to the model, motivation to limit fertility only occurs if the supply of children exceeds their demand and the greater the excess of supply over demand, the greater this motivation. But the actual restriction of fertility also depends on the (economic and psychological) costs associated with various birth control methods. A modification in the specification of the demand function compared with the Chicago approach is that Easterlin’s model incorporated variable and endogenous preferences, which allowed the explanation of difference in behaviour on the basis of opportunities, but also in terms of differences in ‘tastes’. Furthermore the last dependent variable in Easterlin’s model is not children, as much as children surviving to adulthood, thus making not only the supply of children endogenous to the explanatory framework, but child survival as well.

Easterlin contributed another important theoretical proposition to the economic perspective of fertility behaviour. This contribution (Easterlin 1978b, 1980) provided a dynamic element to the analysis of fertility and stands out as the sole fully developed cohort theory in demography. The Easterlin hypothesis concerns the adaptivity of fertility preferences (and subsequent fertility behaviour) to the realisation of a pre-conceived lifestyle. It asserts that an individual’s
desired lifestyle is moulded by experience during the formative period in adolescence at the parental home. The degree of affluence promised by (male) labour market prospects during the reproductive period determines the number of children that can be sustained while maintaining the standard of living that was experienced during the formative period. The labour-market or income-earning opportunities, in turn, are assumed to be negatively related to cohort size. This implies that the ‘tastes’ for children or reproductive goals are not given, as assumed in traditional economic theory, but formed during the experience of the income effects caused by the entry of differently sized cohorts on the labour market.

At the same time as Easterlin suggested his sociological contribution, Leibenstein proposed a similar approach, but cast more in psychological terms, using, for example, the concept of an ‘internalised standard’ (Leibenstein 1977, p. 188). Nevertheless, the result resembles Easterlin’s work as he also combines elements of socialisation and attitude formation into an economic framework, using the concept of formative years during adolescence.

Ní Bhrolcháin (1992) disputes the role of cohort effects in fertility. While she recognises the evidence of cohort mortality, which has a convincing foundation in epidemiological and medical research (e.g. Barker 1992, see also Caselli 1990), she is unable to find similar evidence for fertility. Similarly, Wright (1989) tested the Easterlin hypothesis for sixteen European countries but failed to find a statistically significant correlation between relative cohort size and fertility. From a review of empirical studies, Pampel and Peters (1995) conclude that the evidence for the Easterlin effect proves at best mixed and at worst completely wrong and that the degree of support varies across time periods, nations and level of measurement.

Apart from a number of technical difficulties involved in the measurement of the cohort effect, there are also some conceptual inadequacies. For instance, the theory focuses too much on men’s roles in the labour market whereas new home economics emphasises the role of women and there is some discussion about whether Easterlin’s index of relative cohort size is a good indicator of relative income (Wright 1989, p. 118). Furthermore, the theory’s conceptualisation of socialisation is rather plain: the influence of personal experience operates from a distant and rather fixed past, and neglects the influences of changing social environments apart from cohort size. Exclusive emphasis on the effects of the early socialisation on a person’s aspirations amounts to the neglect of the effect of peer group influences in new environments or of the experiences in adulthood in general (Freedman 1987, Namboodiri 1980). Moreover, there are other life-time specific experiences, such as education and labour force participation, which can have decisive impact on (later) considerations in decision making, for instance with regard to goal setting, dependency of others or the value of children. Lastly, Easterlin’s theory needs to specify better the mechanisms through which relative income influences motivation for fertility. Pampel and Peters (1995, p. 190) suggest that if a number of additional conditions are met, the Easterlin effect might still emerge.

Micro-economic approaches to fertility behaviour are, in principle, best defined in terms of the methodology applied to study behaviour (Siegers 1987, 1991). This methodology rests on the advancement that the basic problem of individuals is to allocate scarce resources so as best to satisfy their desires and, consequently, on the adoption of the concept of choice. Whereas in principle such a decision making perspective is an immensely valuable and universally applicable starting point to assess the microlevel foundations of reproductive behaviour, the economic elaboration of choice is not particularly suited as a general theory of individual behaviour, especially not if the primary aim is insight into the mechanisms of behaviour.
formation. The refrainment from any motivational content poses a fundamental barrier to a full understanding of fertility behaviour and fertility change. An adequate representation of choice, including a recognisable substance of utility as well as the mental processes involved in decision making, demands a broader concept of rationality than that underlying standard neo-classical economics. Apart from the disregard of the processes inherent in choice itself, existing micro-economic frameworks of fertility display insufficiently the life-time dynamics involved in decision making. The Easterlin hypothesis is a breakthrough in this respect, but it is only a first step. Psychological research has demonstrated that motivation for behaviour is adaptive to experiences in a broader life course perspective and depends on the decision-maker’s construction of the choice problem, which evolves with personal development. The need to incorporate such dynamic perspectives necessitates a modified definition of rationality which allows people’s ends to be at least partly a product of their own creativity (Hargreaves Heap 1992, Lesthaeghe and Moors 1992, Elster 1983b). Lastly, the economic approaches are incomplete in the sense that they discard the context in which decision-makers operate, at least as far as the context cannot be expressed in economic terms.

3.3.5. Choice and values of children: socio-psychological theories

Compared with the impact of economics, sociology, anthropology and biology, the contribution of psychology to demographic theory has been very limited (Burch 1981, McNicoll 1992). The fact that, nearly three decades later, Fawcett’s rather superficial Psychology and Population (Fawcett 1970) is still one of the main references on the association between psychology and demography is perhaps illustrative of the uneasy relationship. In Fawcett’s 1970 publication, he contemplated the remarkable almost complete absence of dialogue between demography and psychology up to then. Although the volume may be considered a turning point in mutual disciplinary interest, the impact of psychology remains surprisingly small. In 1980, Burch recognised a more substantive involvement of psychology in demographic behaviour, especially in the field of decision making. But at the same time he remarked that psychology’s contribution remained fairly circumscribed and neglected, for instance, more dynamic elements of learning and development (Burch 1980, p. 5). In 1992, McNicoll mentioned a similar lack of interest in psychological approaches (McNicoll 1992). However, the encounter between demography and psychology witnessed the application of two main theoretical approaches: the value of children approach and applications of psychological value-expectancy models.

The first line of thought can be traced back to a Maslowian perspective on motivation. Taking this as a starting point, Hoffman and Hoffman (1973) constructed a conceptual framework that depicted the way in which children could contribute to satisfying a number of material, social and intrinsic needs. According to this framework, childbearing motivation depends on the evaluation of these satisfactions and the economic and non-economic costs of children. The associated perceived value of children appears as an intermediate variable in the explanation of the relation between socio-economic, cultural and gender aspects and fertility behaviour. The framework was elaborated and operationalised in the ‘value of children project’ in the early and mid-seventies by James Fawcett and others (Fawcett 1972, 1983, Fawcett and Arnold 1973). Survey data were gathered in different countries, and subsequent analysis compared data for countries and regions within countries at different levels of socio-economic
development. In this way the model tried to underpin the propositions of the theory of fertility transition, confirming some of them, but remaining undecided on others (Fawcett 1983, Bulatao 1982). It did suggest an evolution during socio-economic development from economic and material considerations with regard to children, to more emotional rewards and psychological appreciation, which induced the introduction of the concept of the ‘transition in the value of children’. Whereas most applications of the model were carried out within the international comparative framework of the value of children project, several individual studies also relied on it (e.g. Niphuis-Nell 1981). The value of children approach produced a substantial body of literature especially in the early eighties, but has not been pursued much since then. Perhaps this is due to the fact that the research has provided relatively few generalisations about how background variables influence the perceptions of satisfactions and costs of children in order to affect fertility preferences and behaviour (Fawcett 1983). The value of children project did contribute, however, in the sense of providing a global inventory of fertility motivations, an understanding of the multi-faceted nature of children and a life cycle perspective on fertility (e.g. Bulatao 1981, Niphuis-Nell 1981).

Value-expectancy models like ‘expectancy x value’ and, notably, the Fishbein-Ajzen model of reasoned action (Fishbein and Ajzen 1975, Ajzen and Fishbein 1980) were introduced into demography, in the field of fertility, contraceptive use and female labour market participation (e.g. Bagozzi and Van Loo 1991, den Bandt 1982, Fishbein 1972, Jaccard and Davidson 1976, Moors et al., 1989, Von Rosenstiel et al., 1982, Wijsen 1994). The Fishbein-Ajzen model states that the intention to perform certain behaviour is a reliable indicator of the performance of that behaviour. In turn, this intention can be assessed by measuring beliefs about consequences of the behaviour and the valuation of these consequences on the one hand, and perceptions of the opinions of others in combination with the importance attributed to these opinions on the other. An advantage of the model is that it takes into account to a certain extent the influence of the social environment by including a normative component in terms of the opinion of the important others. In an extension of the model, Bagozzi and Van Loo introduced a hierarchical goal structure in which direct aspirations and behaviour are considered as the intermediating arguments in the efforts to achieve more distinct goals. As opposed to the value of children approach, these attitudinal models do not a priori formulate a set of goals related to fertility behaviour. Nor do they pose universal goals for human behaviour like Maslow’s general needs. Although psycho-logical decision making theories share this content-free character with the micro-economic approaches, they empirically search for motivational aspects instead of relying on the vacuous concept of utility maximisation. Where micro-economics has been very reluctant to consider preferences directly and explicitly, this is exactly one of psychology’s main fields of interest.

To some extent, psychological approaches share the problems associated with microeconomic theories. These concern particularly the volitional character of individual behaviour formation and the less than adequate incorporation of the institutional backgrounds determining that behaviour. The theoretical framework underlying the value of children framework, and more explicitly the one underlying the psychological value-expectancy models, assume deliberate choice and purposeful action; these are perhaps not always the most appropriate assumptions given the supply mechanisms of natural fertility, the lack of effective knowledge, the possibility of overriding social pressure in favour of childbearing, and the possibly restricted availability of and access to the means to control it. Ajzen and Fishbein themselves, in fact, recommended
their model especially for situations where individuals have strong control over the factors associated with decision making, which is thus more applicable to developed than to less developed countries. In this respect the incorporation of the concept of self-efficacy (Ajzen 1991, Bagozzi and Van Loo 1991) may improve the explanatory power of psychological choice models.

Fawcett was aware of the possibility of overriding social pressure in favour of childbearing, ignorance of the reproductive process and unawareness or unavailability of means to prevent pregnancy. Nevertheless he stated that “for almost all people everywhere the decision to stop childbearing becomes salient, even though it may be very late in the reproductive cycle” (Fawcett 1972, p. 9). M.B. Smith adds:

“Even near the fatalistic pole [...] where the possibility of modern contraception does not exist in the range of choice, alternatives of delayed marriage, sexual abstinence, coitus interruptus, or abortion may have sufficient psychological reality to suggest the presence of ingredients of decision in childbearing. The involvement of decision would seem to be a matter of degree” (M.B. Smith 1973, p. 9).

Other studies on reproductive behaviour in developing countries support this notion. They reveal that besides socio-cultural constraints on fertility, traditional methods were commonly known to limit family size, and at the individual level various means often existed to intentionally avoid or reduce the risks of pregnancies and childbearing (e.g. Cleland 1985, Handwerker 1986b, B.D. Miller 1981). Knodel reports several studies that show that birth control in ‘natural fertility societies’ is intentionally practised, though not with the objective to reduce births, but explicitly motivated by health considerations of both mother and children (Knodel 1983). Studies by Bledsoe (1990, 1995) among the Mende of Sierra Leone, indicate that individuals do not act strictly within biological bounds and cultural norms, but constantly tinker with household structures in order to achieve desired demographic outcomes. In a historical perspective, the classic publications by Carr-Saunders (1922) and Himes (1970) and, more recently, McLaren’s *A History of Contraception* (1990) suggest that the idea of limiting progeny has rarely been absent from human existence. Historical novels (e.g. Chaucer’s *Canterbury Tales* offers several spicy clues) also indicate that there has possibly always been a desire to influence fertility, either to reduce or increase conceptions and births, to space offspring, or to determine the children’s sex. The existing literature on this subject refers to potions, rituals, coitus interruptus, devices, abstinence, abortion and infanticide as belonging to the range of practices to limit progeny.

True as these statements on the intentionality may be, they cannot eliminate an existing flavour of naivety where the explanation of fertility behaviour is concerned. It has been rightfully recognised that the distinction between the availability of means and actual behaviour, let alone its demographic impact, has not always sufficiently been noticed (Caldwell *et al.*, 1987a, p. 27, 30, McLaren 1990, p. 5). With regard to this demographic impact, Coale (1973, p. 63) considers the incorporation of fertility in the calculus of conscious choice as prerequisite for fertility transition. This implies a collective legitimacy connected to the deliberation with regard to childbearing (cf. Handwerker 1986a, Lesthaeghe and Wilson 1986, Mason 1992, Stamm and Tsui 1986). Such an interpretation is at the centre of Etzioni’s normative-affective decision making model, which states that certain considerations are so morally and/or emotionally ‘unthinkable’ or irrelevant that they are blocked from conscious deliberation; their *consideration* not merely their adoption) is tabooed (Etzioni 1992, p. 93; cf. Bagozzi and Van Loo 1991, Mason 1992). Coale’s notion of fertility within the calculus of conscious choice
may also be interpreted in terms of Rotter’s concept of internal locus of control or Bandura’s self-efficacy (Rotter 1966, Bandura 1977a, 1982). Rotter coins the term ‘external control’ for the situation where an outcome is perceived as the consequence of an action of one’s own but not being entirely contingent. The outcome might typically be perceived as the result of luck, chance, fate, as under the control of powerful others or superhuman forces, or simply as unpredictable because of the great complexity of the forces surrounding him.

Other options to increase the relevance of decision making approaches to the situation in developing countries (although at the expense of quantification) relate to a broader definition of the concept of choice: either by extending decision making analysis to the proximate determinants of fertility (e.g. Bulatao 1984, Hull 1983) or by incorporating the process of choice. According to Fawcett, the notion of choice as a process entails at least three different, not necessarily mutually exclusive aspects (Fawcett 1991, p. 14): the construction of a choice situation and rules of decision making; the sequence of stages in the process of decision making; and ‘sequential decision making’. However, the demographic literature on these psychological concepts remains limited and very scattered.

A great many psychological contributions to understanding fertility remain untapped by the discipline of demography. They might very well add to a more encompassive choice concept that avoids the voluntaristic and purposeful orientation of the presently applied approaches.

3.3.6. Diffusion: technology and ideas

Over the years, the theory of demographic transition has incorporated a number of additional ideas to remedy some of its shortcomings. Many of these efforts were related to the failure to define socio-economic development as the crucial variable of demographic change. The incorporation of some concept of culture especially perceived as a principle involved in the spread of ideas) seemed to provide a promising alternative. In its wake, the concept of diffusion entered the theoretical edifice of demography (cf. Cleland and Wilson 1987, Retherford and Palmore 1983, Watkins 1986, 1987), or better, was re-instituted as a major explanatory strand.

Diffusion can be understood as the process by which innovations spread from one locale, social group or individual to another (Retherford and Palmore 1983, p. 296). The spread of ideas, behaviours and techniques has often been found to follow the grooves laid down by socio-cultural forces, such as language, ethnicity, neighbourhood and workplace, or channels of communication and exchange. Thus, Lesthaeghe’s study of fertility decline in Belgium showed a clear demarcation of fertility patterns and levels along language borders for communities which were otherwise socio-economically very similar (Lesthaeghe 1977). Kirk attributed the early transition in countries such as Hungary and Bulgaria to their location along the Danube as a prime artery of communication and commerce (cf. Kirk 1996). Various others pointed to migration avenues, network channels and institutionalised lines of communication for the spread and explanation of family planning acceptance (e.g. Bongaarts and Watkins 1996, Freedman 1987, Cleland 1987, Watkins 1987, 1989). Entwisle et al., found evidence of the importance of conversational networks to directing and controlling the flow of information about contraceptive methods in rural communities in Thailand (Entwisle et al., 1996). They associated the variety of method acceptance between communities and the typical
predominance of one method within the communities with the structure of largely village-based social networks. The notion of diffusion also focuses attention on the different contextual levels (interpersonal, local, national, global) involved in the transmission of information (Bongaarts and Watkins 1996, Hammel 1990, Montgomery and Casterline 1996, Retherford and Palmore 1983).

The reception of diffusion into fertility theorising brings along its own conceptual and methodological problems. With respect to diffusion, Greenhalgh cautions against a too reductionistic approach, focusing almost entirely on communication about birth control, while neglecting the exchange of a broad scale of perceptions on other issues relevant for reproductive behaviour (Greenhalgh 1995b). To parts of the family planning movement the contribution of diffusion was even restricted to the spread of contraceptive technology (e.g. Ravenholt and Chao 1974). Like Greenhalgh, Pollak and Watkins (1993) argue that diffusion involves more than techniques and mere information. They refer to Van de Walle who states that in the early 19th century condoms were licit in extramarital liaisons, but not within marriage, and to Bledsoe (1991) who reaches a similar conclusion for several African countries. This pertains to the criticism that the diffusion approach is deficient in its omission of the context of contraceptive communication, especially with respect to the requirement of its social legitimation and the spread of values (cf. Lesthaeghe and Wilson 1986, Handwerker 1986b). Related to this criticism, many consider the diffusion concept merely a description without notable theoretical content (McNicoll 1992, Pollak and Watkins 1993), which sometimes entails just summary statistics that reflect the pattern of spatial and temporal spread of some phenomenon. Hammel’s (1990) contribution can be mentioned as an important step to provide more substance to the notion of diffusion, but within demography, of course, Rogers (1983, 1973) must also be referred to, alongside, the more recent work by Montgomery and Casterline (1996), who try to model the social structure of contraceptive diffusion. Still, a fundamental underpinning of the working of the diffusion mechanism - how information is conveyed in the social environment and how the messages are organised and interpreted, and ultimately lead to behaviour - is in the lap of other disciplines such as (cognitive) anthropology, sociology, and, importantly, social learning theory.

3.3.7. Culture, structure and social organisation

The field of fertility theory covers a number of interpretations and approaches that share a focus on the structural level of society: culture, institutions or social organisation. With their backgrounds largely in the more holistic disciplines of sociology and anthropology, a very heterogeneous compilation emerges. Far from claiming to be exhaustive, a list of such approaches to fertility might include system-functionalist ideas derived from Adam Smith’s ‘invisible hand’ hypothesis (Wrigly 1978) and other homeostatic interpretations (Howell 1979, 1986, Kreager 1982, 1986, Lesthaeghe 1980), ‘modes-of-production’ paradigms (Boserup 1970, 1990, Goody 1976), Lesthaeghe’s production-reproduction thesis (Lesthaeghe and Surkyn 1988b, Lesthaeghe 1989b), Cain’s institutional approach of risk and insurance (Cain 1981), Caldwell’s wealth flows theory (Caldwell 1976, 1982), family oriented analyses (Ariès 1962, Cain 1989, Freedman 1987, Davis and Blake 1956, Khan 1987, Ryder 1983), the notion of the second demographic transition (Lesthaeghe and Van de Kaa 1986, Lesthaeghe and Verleye 1992, Van de Kaa 1987), and the recently emerging institutional approaches in the line

Disappointed at failing to find the crucial determinants of fertility in socio-economic indicators, some demographers have turned to culture (Cleland and Wilson 1987). Research based on the results of the World Fertility Survey (e.g. Cleland 1985) and the Princeton study on the European transition experience (Anderson 1986, Knodel and Van de Walle 1979, Watkins 1986), signified the importance of cultural factors as the major independent determinants of fertility levels and the onset of fertility decline. These studies, however, did not elaborate on what was exactly meant by culture. Greenhalgh (1995b) and Hammel (1990), therefore, accuse demographers of a widespread incompetence in conceptualising culture meaningfully, a specification of Ryder’s general complaint that “demographers are much less comfortable with concepts than with data” (Ryder 1983, p. 16). Apart from the work of a small number of researchers, culture has gained hardly any depth; it is usually only grasped in terms of language, ethnicity or geographical region. The large scale surveys on which traditional demographic research is based cannot grasp the meaning of culture, and so to many demographers, the concept connotes a ‘messy bag’ (Lesthaeghe 1989a, p. 2) which may be assumed to contain all residual explanation. The problem of incorporating culture into theory, however, is not restricted to demographers alone: all social sciences consider culture a notoriously difficult concept to define, perhaps even more so than the concept of social structure (cf. Archer 1996).

Culture is usually claimed to stand for the shared and intergenerationally transmitted beliefs and evaluations about the world and people’s place in it. The role of culture in fertility change is presumed to be particularly located in this feature of transferring values and information within a culturally identifiable group (e.g. Lesthaeghe 1977). Culture provides the normative and interpretive or meaning-giving rules according to which people consider fertility and its proximate and ultimate determinants. The link between culture as an ideational or meanings system and social organisation lies in the common order they provide for the definitions of social relationships and evaluation of individual behaviour. Modes of production, intergenerational and gender relations, marriage systems, et cetera are reflected in culture. But on the other hand, by providing social structure with a meaning, culture also legitimises and, therefore, (re)produces society. This dualist manifestation has been acknowledged in the demographic literature by several exponents of a cultural approach to fertility theory (e.g. Greenhalgh 1989, Hammel 1990, Lesthaeghe and Surkyn 1988a). In the social, political and anthropological analysis of fertility, the family is the dominant institution: it is the locus of demand and supply of children, by and large it retains the function of socialisation base, and often it constitutes the prime avenue to achieve things that are important in life, such as economic assistance, security, social interaction and status, information and emotional and political support (Davis and Blake 1956, Dyson and Moore 1983, Freedman 1987, McNicoll 1994).

Several broad lines of thought on the rather elusive concepts of culture and social structure can be distinguished in demography. Most of them are not acknowledged as separate theories, so the discussion here is arranged around the work of the major proponents and publications. A first mode of thought with social structure as its point of departure, is the holistic representation of society as an integrated system of arrangements and mechanisms which are principally geared to the reproduction and maintenance of that system. It can be viewed as a continuation of the Malthusian programme, but based on modern research and insights. A
milestone publication in this respect is Coleman and Schofield’s *The State of Population Theory*. Kreager’s work (Kreager 1982, 1986) may be representative for this approach when he paints an anthropological vision of demographic regimes as Durkheimian organic solidarities. Population process components (fertility, nuptiality, migration and mortality) work in a coordinated fashion so as to adjust population size and distribution to the capacities of the environment (cf. D. Coleman 1986, Lesthaeghe 1980, Livi-Bacci 1984b). This mirrors the classic structural-functionalist anthropology of Radcliffe-Brown:

“The function of a particular social usage is the contribution it makes to the total social life as the functioning of the total social system. Such a view implies that a social system (the total social structure of a society together with the totality of social usages in which that structure appears and on which it depends for its continued existence) has a certain kind of unity, which we may speak of as a functional unity. We may define it as a condition in which all parts of the social system work together with a sufficient degree of harmony or internal consistency, i.e. without producing persistent conflicts which can neither be resolved nor regulated” (Radcliffe-Brown 1952, p. 181).

Such studies concentrate on the colourful anthropological uniqueness of societies, but sometimes tend to over-emphasise the cultural barriers to demographic change (Robinson 1992, cf. Lockwood 1995). By their nature they are not infrequently rather static and descriptive, and fail to provide the links of encountered feedback mechanisms to the motivation of individuals to act in line with the - presumed - long-run societal benefit. Unless a real autonomous consciousness is attributed to the population system, it is hard to grasp how individual and societal needs are synchronised other than in a long evolution of gradual adaptation (Demeny 1986, Livi-Bacci 1984b, Ní Bhrolcháin 1993). But, as Lesthaeghe rightly points out that there is no need to assume a latent aim of controlling population growth if other explanations, centering on direct goals, like survival of children or main-taining power relationships, are available to account for it (Lesthaeghe 1980). On the macrolevel, however, such individual pursuits of goals (portantly shaped by the structure and content of the social environment) may well have the effect of maintaining a functional demographic balance in the long run (Blake 1994).

Explaining demographic patterns solely in terms of system needs easily ends in ad hoc or tautological theorising. The demonstration of the functional quality of certain collective behaviour for a population system cannot demonstrate its necessity to be there, at that time and in exactly that form; there may very well be other, functionally equivalent, behaviour patterns that could respond to the same motives (McNicoll 1992, cf. North 1994). It is easy to interpret an institutional arrangement as valuable if it has found its established place in some situation, but the danger of ex post rationalisation is acute: conceivably a different arrangement would have served the situation even better. This reflection led Demeny to his gloomy remark that “...the impression is overwhelming that history is a story of unrealised potentials that could have been within our grasp” (Demeny 1986, p. 483).

The only line of thought that can lay claim to the status of ‘demographic theory’, and as yet the only one that can conceptually rival the conventional transition theory (particularly in the setting of contemporary less developed countries), is Caldwell’s *wealth flows theory* (Caldwell 1976, 1982). Culture, here, is importantly represented by the meaning of kinship and family, traditionally a central issue in the anthropology tradition from which Caldwell originates. The theory states that the level of fertility is primarily imposed by the direction of the net wealth
flows between parents and children, which include all the present and anticipated benefits over a lifetime. The outcome of this economic rationale is either maximum or zero fertility, but this is adjusted by the impact of personal, social and physiological reasons. The commanding principle underlying the direction of intergenerational wealth flows is the social organisation of the society, and specifically family structures. Caldwell argues that in all traditional societies the net wealth flow has been from younger to older generations, which means that economic motives promote high fertility. This flow will only be reversed if the economic and emotional primacy is withdrawn from the grip of broader family ties and is focused on the conjugal family. The nucleated family is, therefore, a *sine qua non* for low fertility and the transition from high to low fertility is a product of social change with economic implications, rather than economic change alone. The primary force behind the transformation of the family is credited to universal education across a nation or cultural group. Mass education changes the values and costs of children within the family and introduces a Western family model into the society. Capitalising on the general failure to identify critical socio-economic variables for the onset of fertility decline, Caldwell argues that it is the process of Westernisation, rather than economic modernisation, which initiates the change toward low fertility (cf. Ryder 1983). Caldwell’s theory deals explicitly with the structural background of high fertility and fertility decline. Its theoretical stance is represented by H.L. Smith:

“[w]hen change comes, it comes not through the collective exercise of individual choice but through the collapse of a larger system that had heretofore constrained all choices of behavior open to individuals” (H.L. Smith 1989, p. 172).

Put to the test (e.g. Dow *et al.*, 1994), Caldwell’s theory received less support than might have been expected on conceptual grounds. It is not clear to what extent this is due to the severe operationalisation and measurement problems (cf. Schultz 1983) that are inherent in the theory’s formulation.

A third line of thought, like Caldwell’s intergenerational perspective, involves the institution of the family, but with a different nuance. Here, family is primarily the outcome of large-scale historical socio-economic and cultural processes, rather than the exclusive focus of demographic change. This tradition is most prominently recognised in the work by Lesthaeghe. The gist of his work is best articulated by its attention to the analysis of the first two of Coale’s prerequisites for a fertility transition; first that the very deliberation about pros and cons of additional children to the family must be an acceptable form of behaviour, and second that perceived social and economic circumstances must make reduced fertility seem an advantage to individual couples (Coale 1973, p. 65). Both preconditions are clearly anchored in the context of ideational systems and social organisation, which Stamm and Tsui formulate as follows:

“The impact of family-planning technologies on reproductive parameters is a function of the systems of meaning which underlie the reproductive choices and preferences of the individuals comprising a society. Such systems of meaning define both what is and what is not subject to choice and the value of choice options” (Stamm and Tsui 1986, p. 159).

To arrive at reduced levels of fertility, there must be a favourable meaning-giving or ideational environment to direct the preferences and considerations that authorise the legitimacy of individual control over fertility as well as the desirability of smaller family sizes (cf. Lesthaeghe and Wilson 1986). Falling back on Maslow’s (1970) and Inglehart’s (1977) notion that, along
with development, intrinsic personal needs will become increasingly important, a universal
emanicipatory tendency of individualisation may be assumed to have its effects on fertility
behaviour (Lesthaeghe 1983, Lesthaeghe and Surkyn 1988a). This may lead to a decline in
fertility, but only if existing institutions that exert a pronatalist influence lose the legitimacy of
their grip on individual decision making, and if socio-economic conditions are such that the
balance of subjective cost-benefit considerations is tipped towards smaller families. Although
the complex associations between socio-economic development and ideational change are
explicitly discussed (e.g. Lesthaeghe 1989b, Lesthaeghe and Wilson 1986), Lesthaeghe
stresses the importance of autonomous ideational shifts towards liberal and, especially, secular
values. In this respect Lesthaeghe’s ideation cum social-organisation approach is a major
modification of the classical notion of demographic transition.
This general scheme has been applied to the situation in Sub-Saharan Africa (Lesthaeghe
Western Europe (Lesthaeghe 1983, Lesthaeghe and Wilson 1986), and to recent demographic
change in Western Europe (Lesthaeghe and Moors 1992, Lesthaeghe and Surkyn 1988a),
cumulating in the concept of the second demographic transition (Lesthaeghe and Van de Kaa
1986, Van de Kaa 1987, Lesthaeghe and Verleye 1992). Each time, the picture is painted
differently, highlighting the specific relevant elements of the historical and institutional
background. During Europe’s fertility transition this included the nuclear family dominance,
the evolution of a capitalistic mode of production, the waning of religious doctrines as guiding
principles and general economic growth, fuelling individual aspirations (Lesthaeghe 1983,
Lesthaeghe and Wilson 1986). The second demographic transition can be distinguished
primarily on the basis of a marked acceleration of the trend towards self-fulfilment and
individual autonomy, bringing about new types of demographic behaviour in the sense of new
living arrangements and changed timing and prevalence of marriage and childbirth (Lesthaeghe
and Verleye 1992, Van de Kaa 1987). With regard to Sub-Saharan Africa, the designation of
social organising principles relies heavily on the intellectual legacy of Boserup (1970) and
Goody (1976) with respect to the structuring impact of modes of production on patterns of
nuptiality, gender relationships and progeny; but it also relies on classifications in terms of
religious background (especially Islamisation and the survival of traditional religions), female
education and contraceptive use. The emerging picture reveals the complexity of the effects of
interactions between socio-economic development and social institutions on patterns of
starting, spacing and stopping childbearing (Lesthaeghe and Eelens 1989).

A promising new line of interpretation is the institutional analysis of fertility. This approach,
again, may be viewed as a reaction to the theory of demographic transition. Whereas the
classic transition theory searched for general processes (including, at least in its original
formulation by Notestein, the role of social institutions) and focused on macrolevel and socio-
economic aspects, the new institutional approach seeks situational and path-dependent
specificity, and is sensitive to cultural interpretations and the interaction between structure and
agency. The research and analyses of Lesthaeghe and Caldwell clearly largely fall into this
interpretive framework. Well-known is also Cain’s (1981, 1989) analysis of the value of
children as a source of risk insurance in villages in India and Bangladesh, which suggests that
the differences between the settings can be largely attributed to institutional elements like
labour division between the sexes, patriarchy, legal status and social security systems. The
leading demographers in the field, however, are Greenhalgh and McNicoll. While Greenhalgh
starts out from a political-anthropological perspective and McNicoll particularly relies on a
sociological and institutional economics background, they are remarkably in unison in voicing the needs for and elaboration of institutional analysis. Both Greenhalgh and McNicoll largely reject the possibility of general schemes of fertility change. Compare, for instance, McNicoll’s statement that:

“[F]rom a distance, the process of fertility transition that accompanies social and economic development shows many similarities across major world regions […]. Yet at closer range fertility transitions are idiosyncratic. Their course is influenced by the institutional endowments each society has inherited through its particular historical experience” (McNicoll 1994, p. 2)

with that of Greenhalgh:

“There is no single demographic transition, caused by forces common to all places and all times. Rather, there are many demographic transitions, each driven by a combination of forces that are, to some unknown extent, institutionally, culturally, and temporally specific” (Greenhalgh 1990, p. 88).

And again:

“... to understand the causes and character of fertility decline, we need a society-specific institutional approach. [An approach] that focuses on the political, economic, and social institutions […] within which demographic decision making and behavior occur” (Greenhalgh 1988, p. 630, see also Greenhalgh 1989, Tabah 1989, p. 20).


A seminal article that contributed much to the attention for the institutional background of fertility and on the micro-macro link of fertility explanation was conceived by McNicoll (1980). Relying on Simon’s concept of bounded rationality, he argued that the options for fertility behaviour that are salient to the individual consist of only a selection of all possible options, and that this salience depends on the structure of the information environment that is shaped by social institutions. In McNicoll’s perspective, social institutions may be interpreted as the socially constructed (and sanctioned) rules that provide solutions to recurrent problems of individual action and interaction (McNicoll 1985). This normative character of institutional
rules may be complemented with their representational or meaning-giving dimension, which fits better with Greenhalgh’s cultural interpretation. Both McNicoll (1994) and Greenhalgh (1995b) view institutions as social constructs which are constantly being made, remade and possibly dismissed in processes of negotiation and individual action. Although neither of them elaborate much on this issue, it may provide a tangible opening towards psychological and economic choice considerations, and thus a unique opportunity to narrow the gap between macro and micro approaches, structure and agency, and context and choice.

The identification of interpenetrating local, regional and national institutions reflects the multi-level nature of context. Greenhalgh (1990, 1995b) even goes on to the international arena, extending Watkins’s remark that in 1870, the relevant community to which behaviour pertained was largely local whereas in 1960 it was largely national (Watkins 1989). Thus, aims of the international community with regard to women’s rights and reproductive health as voiced at the 1994 Cairo Conference on Population and Development can be effectuated by supportive legislation at state level and women’s organisations at lower levels, but can also be impeded by adverse family and gender systems or local labour market opportunities. Overarching institutions like religion or national family planning programmes may be negotiated differently in a rural farming community than in the neighbouring fishing community, because of the differences in the local economies (cf. Niehof 1985). Due to the sustained conjuncture of various institutions in specific social settings, the meaning of the individual institutions may change in the course of time, which is why, for instance, Catholicism in Ireland has become different from that in Mexico or Sri Lanka (cf. Handwerker 1986a). An institutional approach finds the understanding of fertility at least partly in the historical evolution of the specific amalgam of institutions: it views them as evolving processes which not only depend on current circumstances, but also, and crucially, on their past history, and, which moreover, evolve at every point in time, rather than only during a transition phase (Greenhalgh 1995b, McNicoll 1994).

The various cultural and structural approaches conceive social change differently. Homeostatic approaches are relatively static interpretations, although they perceive feedback mechanisms that secure the reproduction of society (e.g. Kreager 1982, 1986). Sometimes structural approaches address the vehicles of social change, such as education (Caldwell 1976, 1982, Handwerker 1986a, Lesthaeghe et al., 1989), cohort socialisation (Lesthaeghe and Moors 1992, Lesthaeghe and Surkyn 1988a, Ryder 1965) or technological innovation (Boserup 1981). The institutional approaches of Greenhalgh and McNicoll explicitly address the historical evolution and path-dependency of the institutional setting of the society. Fewer are the structural approaches that explicitly pursue the causal mechanisms or the microfoundations of the processes through which social institutions are transformed (e.g. McNicoll 1994). Usually, proponents of this body of thought claim the overriding importance of contextual variables. Sometimes, however, they do not refute individual approaches like choice; some even explicitly acknowledge the importance of both lines of thought and see them as complementary or even compatible elements (e.g. Mason 1992, McNicoll 1980, 1985, Ryder 1983). Lesthaeghe explicitly acknowledges the contribution and validity of decision making approaches if they are properly set against the historical and cultural context. He assumes individualism as a universal force underlying the crumbling of institutions aiming at the control of individual (fertility) behaviour (e.g. Lesthaeghe 1983, Lesthaeghe and Moors 1992, Lesthaeghe and Surkyn 1988a). Greenhalgh takes a less pronounced position, but voices
the common view that political, economic, and social institutions delineate the domains in which goals and options, as well as the legitimacy of demographic decision making are formulated. McNicoll takes this argument much further but, contrary to Greenhalgh and others, represents a bottom-up rather than a top-down approach (although Greenhalgh seems to have a different interpretation in this respect). His translation of institutions into cognitive terms creates a tangible opening towards psychological and economic choice considerations, and thus provides a unique opportunity to narrow the gap between macro and micro approaches, structure and agency, and context and choice.

Most of the structural-cultural approaches may be understood as a reaction to the theory of demographic transition as a leading paradigm in demography. This reaction takes shape in various ways, from a reformulation of the central concepts of a transition (Caldwell), via a further specification of particular conditions under which transition is likely to occur (Lesthaeghe), to an outright rejection of a common force of fertility change (Greenhalgh), and further to the adoption of a situational analysis of the specific combination of relevant institutional forms (McNicoll). The theoretical profundity of the study of fertility declines more or less in the same order. Caldwell’s approach is a straightforward theory, McNicoll’s yields an analytical framework and, hopefully, a methodology or research agenda (McNicoll 1985, 1992).

3.4. Conclusion

3.4.1. Summary of findings

The theoretical orientations presented in this chapter provide distinctive angles to view one and the same object of study. The consequence is a range of different answers to principal questions and requirements with respect to theory building and methodology. In view of this study’s aim of a better understanding fertility, and ultimately a contribution to a better underpinning of population and health programmes, their direct relevance is very different. The realisation of these aims relies on a realistic and comprehensive interpretation of the subject matter and in this respect the various theoretical approaches do not provide a complete picture by themselves, but advance, each differently, propositions that contribute to understanding of fertility behaviour. To some degree, their differences are complementary, but on the other hand they also reflect different interests and assumptions, differences that might be unreducible unless human science in general succeeds in developing an encompassing meta-theory (cf. Coleman and Fararo 1992, p. xv). Does this mean that there is no scope for narrowing down what is tenable as theory on the subject of fertility or demography in general? In a reflective article, McNicoll (1992) argues that, in fact, there is. This concluding section provides a summary of the theoretical elements that can be included in a comprehensive framework of fertility behaviour. Chapter 2 identified the key elements of the structure and contents of such a framework: the acknowledgement of the micro foundations of demographic phenomena, the representation and interpretation of context and individual behaviour (macro and micro-levels), the role of process and time, and a realistic model of man. Taking these as the leading notions, it is possible to distinguish the contributions of different theoretical approaches to a comprehensive framework of fertility. The eventual picture serves as the basis to identify the
gaps and inadequacies to be resolved by additional theoretical insights and further theory development.

Micro and macro
Most theoretical lines of thought applied in the study of fertility emphasise either macro or micro perspectives. Malthusian approaches are the most articulate in the expression of their macrolevel interest. Their focus is on population development and its relations with food production or, more generally, environmental resources. There is less attention for the specification of the intermediate organisation and working of the social environment which exerts the more direct impact on individual behaviour. Even less attention is given to the mechanisms through which context and agents interact, and virtually none to a conceptualisation of individual behaviour apart from a long-range and almost mechanical response to environmental change. Whereas under some conditions the Malthusian macroperspective provides an appropriate background for the study of fertility, in many other situations it tends to represent a normative reference frame or an irrelevant one.

Demographic transition theory should also be classified alongside of macrolevel approaches, although the incorporation of a large number of additional theoretical notions blurs this picture. In the classic formulation, countries or regions were described in terms of macrolevel variables, primarily socio-economic ones. Individuals only came into the picture in as far as they reacted to changing incentives and opportunities that accompanied the development in these societal variables. There was, however, no theoretical basis that addressed the micro level and which could underpin from an individual perspective the emergence of new forms of demographic behaviour. But also as a conceptual device to interpret the context of demographic behaviour, classical transition theory had severe shortcomings. The indicators applied to characterise the environment and (socio-economic) development are crude, revealing only if seen from sufficiently afar, and with little concern for contextual structure and the intricate interplay of contextual elements that generate the large variety in demographic patterns. Later elaborations of the transition approach (e.g. by incorporating culture and diffusion) reduced several of these problems, especially with regard to a more accurate interpretation of context. But even then the theory is better suited to localise countries or groups in a broad historical perspective than to explain fertility patterns in specific situations.

As far as one can generalise the different structural and cultural-oriented approaches in fertility studies, they seem to take an intermediate position in the micro-macro classification, although clearly the focus is more on the context than on individual behaviour. Usually, however, the representation of context is structured, rich in detail and meaningful to the individual agent. They allow a relatively good understanding of the impact of the social environment on individual behaviour by providing a framework for the interpretation of motivation, meaning and opportunities. The gap between context and agency is, however, still insufficiently bridged and the elaboration of a theory of individual behaviour usually takes a subordinate place. With regard to the representation and interpretation of context in the conceptual framework outlined in Chapter 2, this cluster of theoretical approaches offers valuable contributions. Caldwell and Lesthaeghe are particularly strong in fleshing out the elements that express the meaning of context to individual agents, particularly in the area of culture and ideation. Their interpretation of elements like education, religion, family and modes of production, and of societal processes like family nuclearisation, secularisation and individualisation bears the ingenuity that is
required to give substantive body to the environment in which individuals operate. On the other hand, the institutional approaches of Greenhalgh and McNicoll fit in well with the outline of the fertility framework, because of the structural way they represent the fabric of the context. They provide a flexible and accurate means to represent and interpret a social environment, not only in terms of the variety and interplay of institutional forms, but also in terms of substantiating their particular social, cultural, economic and political connotation. The original orientation of McNicoll (1980), which is bottom-up rather than top-down, and his (1994) interactionist interpretation of institutions as sets of rules, correspond in particular with the requirements of linking macro to micro and theorising about individual behaviour.

Micro-economic and psychological theories represent the other end of the micro-macro spectrum. Neither economic nor psychological approaches (as far as they appeared in demographic thought) are relevant for the representation of the role of social context. Their principal contribution lies in the theoretical perspectives on individual behaviour as foundations of demographic phenomena, and particularly in the elaboration of the concepts of choice and motivation: people must assign scarce resources to a variety of items; their decisions can be interpreted in the perspective of motivation; having children takes a position in this motivated choice perspective by representing a number of costs and benefits. Such propositions contribute a fundamental understanding of human fertility behaviour, although by no means do they provide a sufficient understanding. In effect, the economic approach merely assumes this kind of individual considerations and decision making on the basis of observed behavioural outcomes. The psychological approaches in demography actually substantiate motivation and choice considerations, but insufficiently recognise the complexity and limitations of the process of decision making. Both economic and psychological theories applied in demographic studies fail, moreover, to provide any profound conceptualisation of the evolvement of choice considerations, the role of the structure and substance of the social environment and the interaction between context and agency.

The socio-biological approaches take a distant position in their orientation to micro and macro levels of study. The version of Davis and Blake clearly frames the intermediate fertility variables in a sociological approach, emphasising the explanation of fertility from a macro perspective. In this respect, they actually belong to the selection of cultural-structural approaches. The Bongaarts model is virtually devoid of any social or behaviour-theoretical basis. Its aim is purely to explain fertility at population level, but the model’s input consists of aggregated individual data and an understanding of (microlevel) biological principles. Transformation of the population model to an individual-level model bring the microlevel more into the picture, without, however, gaining much in terms of theoretical conceptualisation of individual behaviour.

The crucial contribution of the intermediate determinants models is firstly the explication of the physiological principles underlying fertility behaviour, and secondly, by identifying the intermediate variables of fertility, the definition of the scope of elements to include in a decision making perspective (in the meaning of Hull 1983), and of the contextual elements that exert an influence on fertility (as in the version of Davis and Blake 1956).

Process and time
With regard to the incorporation of dynamic aspects in the interpretation of fertility, theories
applied in demography have far less to offer than with respect to conceptualisation of context or individual behaviour. Malthusian approaches explicitly address population dynamics, but more in the form of feedback or equilibrium mechanisms within a population system and not so much the development or change of the system itself. The theory of demographic transition although it describes a historical process of change largely remains a static account. It represents socio-economic conditions and levels of mortality and fertility in terms of their location in time, but not in terms of a true dynamic perspective that involves their transformation over an evolutionary path. Although the theory touches upon dynamic elements the concept of socio-economic development should be a candidate, and the stated irreversibility of fertility decline definitely implies a true dynamic quality they never elevate the perspective to a real dynamic approach. Moreover, as far as the theory does address change, it is only with respect to the intermediate stage of transition, leaving the pre and post-transition stages devoid of any notion of development.

Cultural and structural approaches are very heterogeneous with respect to the treatment of time and change. Many anthropological and cultural orientations tend to focus on the stability and internal coherence of societies and display a relative neglect of processes of change. Caldwell’s and Lesthaeghe’s approaches are, however, involved in the explication of social and cultural change. Some institutional perspectives explicitly address a dynamic perspective that takes the history of context and the path-dependency of institutions into account. Although this defines their theoretical stance as a real dynamic interpretation, the actual translation of the theoretical perspective into a dynamic representation of context and practical knowledge, is still more or less a pioneering effort. Bongaarts’ model of proximate determinants provides a static perspective on fertility. Nevertheless, the individual-level conceptualisation of women’s reproductive careers, on which the model is based, is phrased in terms of processes, which feature durations and stages that partially depend on previous conditions in the reproductive career. Marriage is a conditional factor for fertility behaviour, and the changes in the biological capacity for conception can also be interpreted in the perspective of life course development. The individual-level variants of the proximate determinants model (S. Becker 1993, Hobcraft and Little 1984), acknowledge the dynamic aspects of fertility behaviour more explicitly.

The psychological and economic orientations in demography that focus on the level of individual behaviour do not expand their attention to the dimensions of time that correspond to analysis at the micro level. Neither the processes involved in decision making and motivation, nor the interpretation of fertility behaviour in a life course perspective entered the canons of economic and psychological lines of thought in demography. Economic approaches of decision making in demography largely rely on the traditional propensity to eschew any reflection about the behavioural processes involved in choice, except for the rationality assumptions underlying utility maximisation. Psychological choice models in principle provide a better footing for an interpretation of choice processes, but they generally limit themselves to attitude measurement and pay no heed whatsoever to processes of attention and perception, information processing, motivation or heuristics. There are studies, both economic and psychological, that incorporate the dimension of life time (choice in a life course perspective or sequential decision making), but these remain isolated cases. The prominent exception to this rule is Easterlin’s cohort theory, which locates individual fertility behaviour at the intersection of the historical time dimension of labour market development and the individual dimension of the life course. The aspects that perform in Easterlin’s time-containing hypothesis, however, cover only a fraction
of the aspects that should be considered in a dynamic perspective.

**Model of man**
The assumptions that defined a realistic concept of the person comprised the relevance of motivation, the involvement of mental agency, broadly defined rationality, biological functions, personal development and social embedment. The model of man (male or female) emerging from the elaboration in Chapter 2, is a motivated person, principally able to outline her life course by means of the capacity to interpret the world and her own cumulative experiences, and by means of reduction and choices taking up the challenge to deal with whatever resources are scarce and whatever objectives are in high demand. Furthermore, in important aspects she is dependent on others who, objectively speaking, live in an identical, changing and segmented, but not necessarily consistent environment that structures the information on which each behaviour is based.

To what extent do the people inhabiting fertility theories correspond with this conceptualisation? Orientations that focus on the macro level tend to be less elaborate in their assumptions about individuals and individual behaviour. In original Malthusian formulations, there is little concern for a thorough conceptualisation of the person, since the main thrust is on the level of population systems. Whatever understanding of human nature there is, relies on fairly simplistic ideas which prominently include the drive for sexual engagement and late 19th century morality. In modern versions of Malthusian approaches, the concept of the person shifted towards the individual who more or less passively follows the directives of an invisible hand which aims at population equilibrium. Demographic transition theory can be interpreted as involving individual persons, in the sense that it describes the changes in the socio-economic environment which supposedly represents the incentives and opportunities for fertility behaviour. The real human being, however, does not enter this world; although some elaborations of the theory try to involve the micro level, they seldom reach the bottom. Motivation is never elaborated at the level of individual understanding, and the representation of context and social embeddedness is uniformly interpreted in terms of very general socio-economic indicators and refers only minimally to the networks and segmented social environment that embodies the meaningful context of people’s reproductive behaviour. The concept of rationality has been addressed to explain fertility change, but only in the crude connotation that implies an absence of mental processes involved in fertility behaviour under pre-transitional or ‘natural’ conditions, and a complete reliance on such processes during transition and post-transition stages. This largely disregards the broad notion of rationality that is required for a full understanding of behaviour.

The biological approaches to reproductive behaviour developed in demography strongly emphasise the physiological aspects involved in fertility, which sometimes included the changes of the capacity to conceive during the life course. Whereas Bongaarts’ model of proximate determinants refrains from any non-biological conceptualisation of human beings, the variant of Davis and Blake is more extensive, particularly with respect to embedding individuals in the social context and its implications related to the life course. Nevertheless, Davis and Blake’s framework is a top-down approach which only marginally deals with the contributions by individuals in behaviour formation in the sense of processes of motivation, mental agency and rationality.
Given the pre-eminence of the individual in micro-economic and psychological explanations of fertility, assumptions with regard to the nature of human behaviour are much more explicit. Although the two disciplines partly share the interest in individual choice, their underlying models of man are very different. In the economic approach, the involvement of individual decision making merely provides the instrument to explain macrolevel observations, whereas in psychological approaches even if they are applied for similar purposes) the decisions and behaviours of individuals are themselves subject of study. Both disciplines rely on the assumption of people as motivated, reflective agents, but only psychological approaches elaborate the concept of motivation (particularly the value of children approach) and the empirical elements of fertility decision making. Economics, on the other hand, does not substantiate motivation beyond the concept of utility maximisation and does not document the actual considerations underlying people’s behaviour. Economics merely assumes a rational human agent (with rationality very strictly defined), whereas psychology actually tries to establish the rationality of behaviour. As far as the two disciplines have been applied in demography (at least, regarding their mainstream applications), they both rely on a substantive type of rationality and do not involve the emergence and demarcation of specific considerations, nor the range of alternative rules and heuristics applied by people faced with choice problems. Neither discipline, moreover, substantiates the relation between the considerations underlying individual behaviour and the social context, although the Fishbein-Ajzen-based approaches incorporate the social environment and normative rules through the opinions of important others. As far as personal development is a theme at all in the micro approaches of psychology and economics, it remains a by-product and does not appear as a principal explanatory perspective.

3.4.2. Prospects, problems, and promises

Given the state of the art in socio-theoretical demography on the one hand and the requirements of a comprehensive conceptual framework of reproductive behaviour aiming at a thorough understanding of fertility on the other, questions arise as to where the main gaps are located, which elements should be improved and what options are available in this respect. Applying the leading concepts of choice, context and time, this section gives a brief account of elements involved in answering these questions, elements which are elaborated in the subsequent three chapters.

On the whole, theory development in demography has focused more on macro levels than on the micro level, notwithstanding the strong reliance on individual data collection. The individual level interpretation of the intermediate variables models provides a strong biological basis of reproduction, but the behavioural conceptualisations are insufficient as a comprehensive theory of individual fertility behaviour. The micro-economic approach prominently the new-home economics variant) contributes only to a limited extent to a true understanding of individual behaviour. In the economic perspective, choice is not a subject of investigation, but merely consists of a series of assumptions that permit elaborate quantification, which, given the empirical record, are rather unrealistic. Psychological approaches to fertility behaviour offer better starting points for articulating a realistic behavioural theory, with regard to both decision making and motivation. However, within demography this body of theory is fairly restricted, since psychological demography has largely
stuck with the value of children approach and the 1970s-based versions of choice models.

The restricted scope of these considerations must be supplemented with a number of conceptual issues to provide a more complete picture of behaviour formation. This chapter’s evaluation of demographic theories suggests that at least the following issues should be addressed:

- a better representation of how people actually perceive and experience situations of choice (including situations of non-attendance and complete ignorance): what information pieces do they pay attention to and how do these enter their considerations;
- the mechanisms that are involved in the acquisition and reproduction of these information pieces;
- the simplifying rules and heuristics involved in processing this information as part of a choice process;
- the way in which information (in terms of content, and acquisition, attention and processing) is related to the context in which people live;
- how the various considerations and processes change in time.

Psychological theory that is relevant to decision making and the working of the human mind covers a much broader field than the few approaches that have entered demography. Among the many theoretical contributions that could fill out the concept of choice into an encompassive theory of behaviour are assumptions with regard to goal structures (e.g. Lindenberg 1989, Maslow 1970, Rokeach 1973), principles of learning (Bandura 1986), developmental and life course approaches (Erikson 1980, 1984, Havighurst 1972, Levinson and Gooden, 1985), choice heuristics and framing of decisions (Earl 1986, Janis and Mann 1977, Tversky and Kahneman 1990, Vlek 1990), alternative versions of the concept of rationality (Hargreaves Heap 1992, March 1978, H.A. Simon 1978, 1979a), and recognition of the cognitive organisation of information (Bandura 1986, Hargreaves 1980, Piaget and Inhelder 1973, Rosenthal and Zimmerman 1978, Wyer and Gordon 1984). Many such psychological insights have become shared and incorporated by neighbouring social sciences. In many instances institutional economics and cognitive branches of sociology and anthropology) they provide the micro foundations of the representation and working of macrolevel social phenomena.

With regard to the conceptualisation of context, developments in demography in relatively recent years offer a good scope to substantiate people’s social environment in a meaningful and dynamic way. Economic and psychological approaches in demography gravely neglect the contextual (and historical) backgrounds and the social mechanisms that impinge on individual considerations. But particularly with institutionally-rich approaches like those put forward by Lesthaeghe, Greenhalgh and McNicoll, demography has made prominent advances in this respect. These perspectives provide relevant input for the more encompassive theoretical framework that this study aims for. Among the constructive points of these approaches is their potential for a situation-specific representation of context and for the full incorporation of social, economic, but also cultural and political dimensions. They partially recognise that outside demography the notions of cultural systems and institutions have moved far beyond the deterministic, static and strictly autonomous sense of a Ding an sich (cf. Archer 1996, Hammel 1990, McNicoll 1994). They also provide the opportunity to draw out the structure of the
social environment and the nature of the interweaving linkages of contextual components. Moreover, the institutional perspective contributes to reducing the structure-agency problem by embedding choice and behaviour in a cognitively defined environment, a point which particularly features in the original (1980) formulation cast by McNicoll. Lastly, it has a quality which relates to the principles of social change, partially by relying on an interactionist’ interpretation. While recognising important mechanisms that sustain compliance to social and cultural conventions, this interpretation maintains that macrostructures are always created, re-created and changed in micro-action. This implies the notion of culture and institution as a process (Archer 1996, Burns and Flam 1987, D’Andrade 1984, Langlois 1986a, Münch 1987, North 1994).

The representation of context in the encompassive theoretical framework, as well as the conceptual link between context and choice, may well rely on such perspectives. The further elaboration will require the addition of several conceptual elements and a better theoretical anchoring. For instance, the application of the rule concept in institutional approaches usually puts too much emphasis on the normative function of rules and tends to neglect their representational function. Also, the transmission and reproduction of rules and institutions is still inadequately articulated. However, developments in social learning theory (e.g. Bandura 1986), institutional economics (Nelson and Winter 1982, North 1994) and cognitive sociology and anthropology (Berger and Luckmann 1966, Burns and Flam 1987, D’Andrade 1995, Giddens 1984) may guarantee a fruitful pursuit of this line of thought in demography. Lastly, the representation of process and time which adds a dynamic dimension to the concepts of choice and context) has not yet entered mainstream theoretical thought in demography. Nevertheless, there is a considerable body of demographic analysis that relies on life course perspectives (e.g. Birg et al.,1991, Bulatao and Fawcett 1981, S. Coleman 1983, Courgeau and Lelièvre 1989, Manting 1994, Mulder 1993, Namboodiri 1983, Willekens 1991). The path-dependent orientation of newly emerging institutional approaches may contain the promise of a context-dependent historical time perspective. An encompassive theoretical framework of fertility should identify such relevant time dimensions for the analysis of fertility and provide the possibility for a more substantive interpretation of the mechanisms linking context, behaviour and development in a dynamic perspective.

The next three chapters will elaborate the main theoretical concepts required for the framework of fertility choice, context, process. This effort will be pursued in the light of the evaluation of fertility theories presented in this chapter, relying on theory development in neighbouring behavioural and social disciplines, and considering the implications of a demographic model of man and the requirements of social theory.