Chapter 4. Choice

4.1. Introduction

Chapter 2 identified choice, context and time as the leading concepts of the theoretical framework in this study. This chapter focuses on the conceptualisation of choice. It does not aim at a conception of decision making per se, but of choice as a general approach to understanding behaviour. The outcome of this chapter is envisioned in terms of an interpretive perspective of individual behaviour, rather than a formal theory of narrowly defined decision making. The elaboration of such a choice concept draws on four closely connected and partly overlapping considerations that relate to the defined model of man. One is the application of a broad notion of rationality. The second is the placement of choice in a broader cognitive perspective which deals with the role of information and cognition in human behaviour. The third is the situation of decision making in a social context of structured information. And the last pertains to an accommodation of the choice perspective to the specific area of fertility. The decision making approach that draws on these considerations incorporates the rationality concept as outlined in Section 2.4 as well as the concept of intermediate fertility determinants and the relevant choice elements that ensued from the evaluation of fertility theories in Chapter 3. The development of the approach will, however, strongly rely on conceptualisations evolved in other behavioural sciences. The elaboration of the choice concept in this chapter furthermore secures a close connection to the elaboration of context (Chapter 5) and life course development (Chapter 6) and, thereby, the prospect for integration in an encompassive model (Chapter 7).

In such a model, the concept of information provides the integrative strength. Therefore, this chapter starts out with a discussion on information as it is represented at the micro and macro level (Section 4.2). Information is not only conceptualised in the sense of given and explicit messages, but also as pertaining to implicit connotations, signals and emotions. It is also perceived as involving the active participation of agents in the interpretation and construction of the messages. The notion of cognitive schemes as mentally organised information and personal considerations as the subjective information elements entering individual decision making, provide the link between information, choice and behaviour.

Section 4.3 addresses the various aspects of decision making required for the development of choice as a general mechanism of behaviour formation. These aspects include the problem space as the subjective representation of a situation of choice (4.3.2), the concept of motivation (4.3.3), processes, rules and heuristics in decision making (4.3.4) and personal control (4.3.5). The last section of this chapter (4.4) recaptures the points that comprise the inputs for a further specification of the basic conceptual scheme as far as fertility decision making is concerned.
4.2. The role of information in choice and context

4.2.1. Information, meaning, and considerations

The theoretical basis, laid down in Chapter 2, suggested the concept of information as a general interpretive notion to integrate the various perspectives associated with choice, context and development. The use of such a meta-theoretical concept raises a number of questions. What does ‘information’ consist of, where are the sources of information, how should we understand the information that influences people’s perceptions and behaviour, which cognitive processes are involved in noticing, selecting, processing and organising information, how much consciousness is involved?

The elaboration of the concept of information is intended to provide a common ground for the interpretation of various elements and processes that compose the conceptual framework of this study. As such it not only supplies a degree of coherence within this framework, it is, at a higher level, also an avenue for integration of various behavioural sciences. Many disciplines and sub-disciplines rely on corresponding interpretations of information-structured environments and information-processing agents. Thus, similarities can be distinguished between approaches in sociology like Giddens’ structuration theory (Giddens 1984), the rule system approach of Burns and Flam (Burns and Flam 1987) or the sociology of knowledge (e.g. Berger and Luckmann 1966), in cognitive anthropology (Archer 1996, D’Andrade 1995, Eisenstadt 1989, Hammel 1990), in institutional and evolutionary economics (Nelson and Winter 1982, North 1994, O’Driscoll and Rizzo 1985), in various psychological theories like social learning theory (Bandura 1977b, 1986, Bower and Hilgard 1981, Rosenthal and Zimmerman 1978), Piaget’s developmental psychology or information processing theory (e.g. Newell and Simon 1972), and in different decision theories.

The common starting point of these approaches consists of the role ascribed to cognition and usually, in line with this, the assumption of an active agent who interacts with the environment, rather than one who is determined by it or operates in isolation from it. Whereas cognitive anthropological and sociological approaches assigned a central place to the informative content and structure of the environment by principle, more individualistic approaches also increasingly acknowledged this as an important theoretical device (Abell 1992, Boudon 1987, Friedman and Hechter 1991), which stimulated the development of institutional approaches and rational choice theory (e.g. Coleman and Fararo 1992, Elster 1986, Langlois 1986a, Levi and Cook 1990).

The notion of information can be confined to the existence and communication of explicit knowledge, such as learning to read at school, conveying the introduction of a new contraceptive, the prices of houses on the house market or certain personal characteristics of potential partners on the marriage market. More interpretive applications of the concept of information show that the informative contents of the environment (the physical context, artifacts, cultural systems, action and interactions of others) contain much implicit information as well. This broader interpretation of information is often captured in the concept of meaning. Thus, one and the same object such as a wooden chair may have different meanings to a carpenter (the craftwork), an artist (the design), an interior designer (harmonisation in the environment), a user (the comfort) and a widow of someone who usually sat on it (the emotional value). Although the stimulation is the same and in principle contains the whole range of information, what differs is the information extracted from (or attributed to, as interactionists would say) the object, because of the different functions it represents to the observers. Similarly, one and the same behaviour or phenomenon, such as employment, marriage or childbearing, can have very different meanings. A clear example of information that is implicitly comprised in the context, is contained in Caldwell’s wealth flows theory. He attributes an important role to the education system in changing reproductive patterns. But instead of emphasising the formal contents of the curriculum in this respect (such as
conveying knowledge, learning skills and preparing for jobs) he points at the

more subtle and unintended informational contents. Based on European standards, educational systems implicitly connote and imprint Western models and family relations between spouses and between parents and children (Caldwell 1976).

Here, the notion of contextual information will apply to the more encompassive interpretation: it is not limited to the factual information as imparted through educational institutes, information campaigns, various media, or personal communication; nor does it only refer to the shared normative and prescriptive rules that people apply to set out a course of action; it refers to all the explicit and implicit models, meanings and messages that can be extracted from the environment in the process of interaction between context and agents (cf. Bongaarts and Watkins 1996, p. 657 ff.). This contextual information influences people’s behaviour as it becomes translated into the personal considerations on which they act. These considerations refer to the part of the contextual information that together with information from internal sources acquired meaning or has emerged as salient to a person in a specific situation and at a specific point in time. The elaboration of the concept of choice in this chapter will distinguish types of personal considerations which will represent the cognitive determinants of behaviour.

A shortcoming of most decision making theories is that they neglect the issue of how considerations are produced. This issue is a crucial aspect in Simon’s perspective on procedural rationality. Although he explicitly acknowledged the role of attentional and representational processes to bring certain aspects of reality into focus and ignore others (e.g. H.A. Simon 1987, cf. Nelson and Winter 1982, p. 67), he was less concerned with the sources of and the mechanism responsible for these confinements (cf. Rutherford 1988, p. 52). This chapter will situate a more encompassive choice concept within a larger cognitive framework that addresses the contextual sources of information and the mechanisms through which they are translated into personal considerations. Another weakness of most choice theories is their preservance of a static perspective, in the sense that they neglect the issue of how personal considerations change over time. This issue will be dealt with in Section 4.2.3 and in Chapter 6.
4.2.2. Emotion and consciousness

The concept of information outlined above and its translation into personal considerations, definitely includes emotion-laden aspects. Many branches of behavioural science feel uncomfortable with the concept of emotion, which surfaces, for example, in feelings of justice, ethics, anger, joy, excitement, shame, happiness, love, pain, anxiety, sadness and satisfaction. In the life domain related to fertility (including sexuality and the bearing and raising of children) emotions occupy a central role. If emotional background is considered to be an important determinant for behaviour (which is generally agreed upon) and one aims at understanding behaviour, a conceptual framework should be able to integrate emotional factors (e.g. Scheff 1992, Klosko et al., 1987). Nevertheless, many theoretical approaches tend to narrow down or completely ignore their role as causal agents. Cognitive traditions are no exception to this rule, although there are various attempts to address the issue of emotional factors in the study of behaviour. Kuhl (1986) and Rokeach (1973), for instance, incorporate such factors, but, based on the common assumption of incompatibility between emotion and reason, argue that cognitive and affective processes should be distinguished from each other. Etzioni (1992) proposes a model of decision making based on such a distinction. He contends that the majority of choices people make are completely or largely based on normative-affective considerations and that, because such choices entail a different style of decision making, existing models are unable to cope adequately with large areas of human behaviour (see also Nelson and Winter 1982, p. 67). With respect to fertility decision making, also Van Luijn (1996) seems to underscore this perspective as she wants to distinguish ‘rational’ and ‘non-rational’ (emotional) processes influencing the process and style of choice. Simon, on the other hand, acknowledges the informative function of emotions and mentions them among the elements of procedural rationality, influencing as they do the focus of attention and the definition of the situation (H.A. Simon 1987, p. 26). Similarly, Niphuis-Nell includes emotional factors in individual rationality: since the impact of emotional considerations on people’s motivation for having children is comparable (but not equal) to, for example, material or social considerations, they do not require a principally different treatment in the conceptualisation of behaviour (Niphuis-Nell 1981, p. 193). Frank analytically equates the role of emotions and moral sentiments in human behaviour with the concept of tastes, placing sentiments and passion clearly within reason. Thus, a person motivated to avoid the emotion of guilt may be equivalently described as having a ‘taste’ for honest behaviour (Frank 1992, p. 179). Collins (1993b) is even more elaborate in his involvement of emotion by assuming the attachment of emotional energy to various courses of action to be the main heuristic to simplify decision making considerations. Learning theory advances the integration of cognition, behaviour and emotion by emphasising the cognitive determinants of emotional reactions. Novaco’s (1979) model of emotional stress and anger identifies two cognitive processes that have a mutually influenced relationship to anger: one in the form of expectations (as subjective probabilities about events, and based on previous appraisals of related circumstances) that occur prior to the exposure to stressors; and a second in the form of appraisals (a function of the expectations one has regarding oneself and others) that accompany and/or follow the stressors. Becoming angry has feedback effects which make future expectations and appraisals a function of the experienced anger arousal. Such insights reappear in social learning theory as it asserts that many emotional predispositions are acquired by processing information related to direct experience or to observing others in situations where emotion-laden symbols provide the basis for affective learning (Bandura 1986, Bower and Hilgard 1981).

These various considerations acknowledge both the need to involve emotions in understanding behaviour and the possibility of phrasing them in terms of information. Even though emotions may relate to unconscious or subconscious processes, may derive from a different source than other considerations and may involve a different style of contemplation, a cognitive approach can well
incorporate emotions in a decision making framework: with regard to behavioural determination emotional considerations are similar to economic or social considerations, and with regard to conceptualisation equal to perception or thought (Scheff 1992, Kemper 1993, D’Andrade 1984, cf. Bandura 1986). Etzioni, for instance, rejects the standard interpretation of well-informed, calculated decision making, but he conserves the relevance of choice as a paramount mechanism of behaviour by incorporating normative-affective factors, which:

“shape to a significant extent decision making, to the extent it takes place, the information gathered, the way it is processed, the inferences that are drawn, the options that are being considered, and those that are finally chosen” (Etzioni 1992, p. 91).

This is not a refutation of choice, nor is it a refutation of the role rationality. It only mitigates a specific calculative choice and the role of a specific substantive rationality. In fact Etzioni’s suggestion is exactly what Simon searches for to substantiate the notion of procedural rationality, which refers to the (non-rational) processes that influence the focus of attention and generate the actor’s subjective representation of a decision (H.A. Simon 1987, p. 26). Therefore, emotions are considered to be an inherent element of decision making.

4.2.3. Cognitive schemes

The information that is personally available although not always directly and consciously accessible does not consist of an amorphous sea of unconnected bits of knowledge. Cognitive psychologists believe that information is internally organised into knowledge structures, variously labelled as schemes or schemata, mental maps, scripts or mental frameworks. Such cognitive schemes allow agents to interpret and construct ‘reality’, including themselves and their position in the environment. Such understanding constitutes the backbone of cognitive theories such as Piaget’s developmental psychology and learning theory, but it is also a starting point in various other cognitive orientations in behavioural disciplines, such as the sociology of knowledge (Berger and Luckmann 1966), institutional economics (North 1994, O’Driscoll and Rizzo 1985) and cognitive anthropology (D’Andrade 1995).

There are commonalities between Piagetian theory and social learning theory in their assertion that a person’s mental organisation can be considered as a stage of equilibrium in a process of adaptation or ‘equilibration’, which encompasses two complementary processes. The first is a process of assimilation. This process matches information from the physical, social and intrapersonal environment to the existing cognitive frame of reference that consists of various mental schemes. These schemes operate as filters which select, interpret and judge information with which the individual is confronted. The second process is an accommodation mechanism that adjusts, expands and differentiates the existing cognitive organisation in the face of new or discrepant information. An adjusted mental structure, in turn, prepares again for a better assimilation of information and increases a person’s ability to learn and recall new information about particular objects, events and behaviours (Piaget 1975, Piaget and Inhelder 1973, Wyer and Gordon 1984). The construction of cognitive schemes is thus a continuous, dynamic process of assimilation and accommodation that occurs over the whole span of life. In the social learning theory of Bandura (1977b, 1986) this storage and organisation of information in cognitive schemes is represented as retention processes. As one of the major constituent processes of learning and decision making, it will be incorporated in the broad conceptualisation of choice.

The fact that people have learned and structured information at their disposal allows them to infer the meaning of objects, events and situations, as well as to judge causal contingencies and their
own behavioural capacities and limitations. A crucial aspect that lends additional power to the thinking of human beings, is their well-developed capacity to abstract. People are able to generalise the information that they assess from particular events or experiences to rules that apply to different, new or imagined situations (Bandura 1986, Rosenthal and Zimmerman 1978, Wyer and Gordon 1984). In accordance with the interpretation of Rosenthal and Zimmerman (1978), such rules are understood as cognitive representations of a systematic relation between two or more aspects. Hierarchies of embedded rules can subsequently be understood as constituting a person’s different mental frames or schemes.

Thus, mental schemes, as knowledge structures or frames of a higher order, coordinate behaviours and personal considerations such as perceptions, expectations, motivation and decision rules (Esser 1993, Prendergast 1993). Through the associative function of such cognitively constructed schemes, a single input in a specific situation, a stimulus, a symbol, a cue, is enough for a person to infer a whole set of meanings, orientations and behaviours, independently from the original information that led to the construction of these schemes. This allows people to create a coherent and functional view of the world and to infer causal and judgmental rules that are retained over time and generalised to new situations (Bandura 1986, Rosenthal and Zimmerman 1978, H.A. Simon 1979a). As such the schemes of symbolic conceptions serve as ‘cognitive maps’ (Abeles 1990) or ‘recipes’ (Berger and Luckmann 1966, Schutz 1976a) that give meaning and create expectations and standards against which performance is judged (Bandura 1986, Wyer and Gordon 1984).

The structuring of people’s perception on the basis of established cognitive frameworks is a major mechanism dealing with the problem of bounded rationality. The considerations that are activated within the boundaries and structures of one or more of these mental schemes make up a person’s salient decision frame, which is addressed in different nuances by the ‘definition of the situation’ (Esser 1993, Heise 1986, Schutz 1973a, 1973c, H.A. Simon 1957, 1978), ‘problem space’ (Newell and Simon 1972, Payne 1980), ‘framing’ (Lindenberg 1989, Tversky and Kahneman 1990) and ‘habitus’ (Bourdieu 1984). The bounded rationality of decisions and behaviour refers to a rationality relative to such a cognitively confined decision frame. Since these decision frames are rooted in specific cognitive schemes, which are only subsystems of a person’s total knowledge, bounded rationality allows for inconsistencies in perception, thought and behaviour (e.g. Earl 1986). Simon, for instance, asserts that blocks of a person’s time can be allocated to activities related to separate means-end chains without the requirement of overall allocation or coordination (H.A. Simon 1982, p. 136). Moreover, objectively identical choice situations can invoke subjectively different decision frames and preference reversals as a result of minor changes in the formulation of the situation (Tversky and Kahneman 1981). Rather than assuming that in choice processes all available knowledge is regarded, but differently weighted, we need a theory that relies on bounded and procedural rationality, and which focuses on processes of attention and the definition of the situation (Nelson and Winter 1982, H.A. Simon 1987).

Whereas most cognitive disciplines more or less agree on the value of the concept of mental schemes, they diverge with respect to the origins of the information that is organised in these cognitive frames. Some theories, for instance original learning theory and Piaget’s cognitive development theory, emphasise personal experience, whereas sociological, anthropological and institutional approaches tend to elaborate the social and cultural environment. Social learning theory, as developed by Bandura in particular, takes an intermediate position in this respect and holds promise for integration of various perspectives. Social learning theorists distinguish four important sources of information: personal experience, observational (or vicarious) experience, verbalisation by others and emotional arousal (Rosenthal and Zimmerman 1978, Bandura 1977b, 1986). This understanding explicitly distinguishes internal and external origins of knowledge and although more implicitly provides the conceptual setting for linking individual considerations and cognitive schemes to the structure and meaning of the wider context. Social learning theory,
therefore, offers an important contribution to the theoretical model developed in this study.

4.3. An elaboration of choice

4.3.1. Situating choice and the standard notion of decision making

The basic explanatory framework introduced in Section 2.3 cast the approach to individual behaviour in terms of choice theory. The application of the concept of choice in mainstream decision making models based on notions of substantive rationality) with the pinnacle in neoclassical economics) was, however, considered a too narrow a perspective. The major choice theories in psychology, sociology and economics have been developed as behavioural theories. But they are not necessarily theories for all behaviour. They represent theories for behaviour as far as this is confined within the limits of substantive rationality, consciousness and intentionality and as far as behaviour is frozen in a moment of time (cf. Bohman 1992, H.A. Simon 1978). The strength of these theories is located in their capacity to construct mathematical models with measurable parameters and the apparent opportunities for verification. Their weakness lies in the sometimes excessive simplification or neglect of behavioural determinants in order to fit them into model parameters, the disregard of the procedures involved in choice and behaviour, the virtual detachment of choice and context, and the inadequate concern for the dynamic aspects of decision making and behaviour.

The promise that choice theory holds for understanding not only people’s explicit decisions, but the full breadth of human behaviour, can only be redeemed if the concept of choice is extended beyond the narrow connotation in mainstream decision theories. Many aspects that are insufficiently represented by current decision making approaches can be incorporated if the overall perspective and the concepts involved are broadened. Such a more encompassive conceptualisation would rely on a broader notion of rationality as represented in Section 2.4; on a broader notion of information as elaborated in Section 4.2; on embedding individual aspects of decision making in the broader social environment as comprehended in Chapter 5; on situating choice and context in a perspective that is extended with the dimension of time (Chapter 6); and on integration in an overall cognitive approach. Since the resulting conceptualisation is more aloof and offers less points for direct substantiation, it should be regarded as a heuristic scheme rather than as a measurement device. In such an interpretive frame an explicit type of decision making serves only as a benchmark for the notion of choice (cf. Abell 1992, p. 196, Ranyard 1990, p. 296). Such decision making does underlie part of people’s behaviour, and in some life domains even an important part. In many cases, however, it is required to add the subtleties of bounded, procedural and expressive types of rationality, reduction of explicit information processing, forms of uncertainty and ignorance, routine and institutionalised decision making, and the selective cognitive processes and heuristics that shape the components and procedures of decision making. The basic concepts that are associated with choice) e.g. options and expectations) retain their explanatory value in such cases, although in some situations they become mere analytical points of reference. Most behaviour will be covered by the more elaborate interpretation of choice, but there will remain parts of behaviour in which there is no place for decision making aspects. Even then, the very failure of their applicability may provide a frame of reference that contributes to understanding people’s behaviours.

Although behavioural sciences comprise many different perspectives on decision making, there is some common base. This standard notion usually conceptualises three components of decision making (cf. Burch 1980, Esser 1993, Lindenberg 1989, March 1978, H.A. Simon 1957):
• a set of alternatives open to choice;
• an evaluation of consequences of the alternatives;
• a selection of a particular alternative according to some rule or criterion.

The differences between various theories are located in the assumptions about what exactly occurs in these aspects, in the additional features attributed to decision making and in the extent to which choice is embedded in a larger context and to which it is analysed as a dynamic process.

The distinction between the three general choice components is largely an analytical construct. In the actual process of choice the features are complexly intertwined. However, elaboration of each, while bearing in mind their interdependence, helps to substantially disclose the nature of choice as a theory of behaviour.

With respect to the alternatives open to decision making, the paramount questions should be: whose alternatives, what alternatives and why these alternatives? In order to find a frame of reference to understand individual behaviour, there is little value in defining the range of behavioural options and their consequences in terms of some objective reality (if there is any) or as perceived by an observer. A researcher must distinguish the task environment - the choice situation as defined by an objective researcher from the subject’s problem space - the internal representation of the task environment used by a particular subject (Payne 1980, Einhorn 1980, Esser 1993, Newell and Simon 1972, Rutherford 1988). Section 4.3.2 elaborates on issues involved in this aspect of choice theory.

The second commonly identified choice component - the evaluation of consequences - touches directly upon the aspect of motivation in human behaviour. Choice approaches usually assume that the consequences agents anticipate are evaluated against the objectives that are salient to him or her. In most behavioural theories such objectives are elaborated differently and appear under the labels of goals, motives, needs, ends and end states. Economists, on the other hand, tend to collapse motivation into the one-dimensional concept of utility maximisation and refrain from inferences about preference formation, choices among goals and motivational inconsistencies. This provides no clues about the subjective framework of decision makers’ ends and allows no inferences about what, in the end, motivates people. If, however, one aims at understanding human behaviour by means of a choice perspective, motivation represents a crucial aspect which must be elaborated in terms of its contents, structure, formation and origin (Section 4.3.3).

The third choice component, referring to the subject of decision rules, can be embedded in a larger perspective on the style of decision making. This involves aspects such as choice heuristics, the level of consciousness, the variation in the degree of calculation employed and psychological costs contained in the process of choice and search for information. This perspective also induces a perspective of choice as a process of decision making. Rather than concerning the contents of choice, these aspects commonly consider ‘how people decide to decide’ (Plott 1991). Section 4.3.4 will elaborate on the considerations with respect to different styles of decision making.

One aspect which is not a standard element in choice theories is the element of control. In other conceptualisations of behaviour, however, variants of this notion appeared to be important determinants of behaviour. From a choice perspective, it might also reduce the unrealistic voluntaristic interpretation of decision making. Section 4.3.5 will address the theoretical backgrounds of this aspect and the efforts to introduce it into a decision making framework.

4.3.2. Setting the problem space
A subjective interpretation of rationality and choice requires the knowledge about the decision maker’s perception of the objective task environment. Choice approaches that do not directly explore the formation of this problem space cannot adequately judge people’s behaviour, since they are mute with respect to the bounded information with which people did make their choices. A recurrent theme in the work of Simon is the need to construct a procedural theory of decision making including the processes that generate the actor’s subjective and bounded representation of the decision problem, his or her frame: how do particular aspects of reality, rather than other aspects, come to the decision maker’s attention; how is a representation of the choice situation formed; how are reasoning processes applied to draw out the consequences of such representations (H.A. Simon 1987). In a substantive theory of rationality there is no place for processes of attention and representation. Confronted with the shortcomings of such approaches, critics from within the micro-economic tradition also increasingly argue for the incorporation of behavioural, and particularly cognitive, perspectives in order to replace the normative interpretation of choice with one that describes how people actually behave (e.g. Hahn 1991, Plott 1991, Stiglitz 1991).

A decision maker’s problem space can be perceived as the salient (and subjectively constructed) part of a task environment (see Figure 4.1). It consists of a limited set of behavioural alternatives (A), each associated with a limited number of consequences or outcomes (O). Each of these outcomes attains a meaning as it is measured against a set of values or goals (E) held by the individual. The problem space can differ from the task environment in the sense that a behavioural option and its associated outcomes and values are not perceived (e.g. A sub 1, O sub 1,a, E sub 1,a), or that from a particular alternative (A sub 2) one or more consequences and evaluations (O sub 2,1 and E sub 2,1) remain out of consideration. It might even be the case that the agent incorrectly supposes that a certain option has certain outcomes with values attached to them (O sub 3,4 and E sub 3,4) which are therefore part of a problem space upon which a person acts, but which are not included in the objectified task environment.
The leading issue of the notion of problem space is

“... to determine the processes, individual and social, whereby selected aspects of reality are noticed and postulated as the ‘givens’ for reasoning about action” (H.A. Simon 1987, p. 26).

Although Simon forcefully underscored the role of such processes, he did less to elaborate on their sources and the specific mechanisms involved (cf. Rutherford 1988). However, various behavioural disciplines (sociology, psychology, anthropology) did develop ideas to view choice-like procedures within a larger cognitive perspective. Often these ideas draw on the existence of mental schemes that structure the information held by an individual (see Section 4.2.3). Such cognitive schemes associate a selective number of information pieces in a specific way and provide the basis of people’s bounded considerations (cf. Esser 1993, p. 22). The research task then involves the identification of the considerations that are salient in specific task environments and the reasons why they became so.

The problem space may embody a genuine representation of a range of viable alternatives and well-defined outcomes. On the other hand, one must be aware that there may be situations where mental representations perceive only one option or even preclude the recognition of a choice situation. Etzioni, for instance, assumes that emotional influences often exclude most options by excluding from deliberation major sub-sets of facts, interpretations, and options that are in principle or as deemed by scientific observers accessible by the actor (Etzioni 1992). This ‘tunnel vision’ evolves into a complete exclusion of alter-natives if such considerations are treated as
morally and/or emotionally ‘unthinkable’ or irrelevant. It may be the case, according to Etzioni, that excluded options are blocked from conscious deliberation: their consideration (not merely their adoption) is tabooed (ibid., p. 93; Etzioni’s italics; cf. Bagozzi and Van Loo 1991). This situation is embodied in one of Coale’s prerequisites for fertility decline if the condition that “fertility must be within the calculus of conscious choice” is interpreted as implying a collective legitimacy connected to the deliberation about childbearing (Handwerker 1986a, Lesthaeghe and Wilson 1986, Mason 1992, Stamm and Tsui 1986). In other cases, the fact that an agent perceives no options may be due to complete ignorance, the obviously overwhelming negative consequences of alternatives, or the convincing presence of well-tried routines and institutionalised behaviour. Although these considerations seem to violate the essence of genuine choice, they are not necessarily in conflict with choice theory. Rather, they reflect various possible mechanisms that may be involved in setting the problem space. The association of overwhelmingly negative consequences does not mean the absence of an alternative, but the attribution of an unacceptable negative value to an alternative, which is at least conceptually in line with a decision making approach (cf. Blake 1994, p. 173). Hull’s phrasing with regard to fertility behaviour emphasises the conceptual relevance of this approach:

“The statement ‘I had no other choice’ is thus not a denial of decision making, but a confirmation that alternatives were unacceptable, or that the contradictions inherent in the decision problem could not be overcome. ‘Aberrant’ behaviours, such as abortion, suicide, homicide, abstinence, celibacy, and flight, are available alternatives in most societies; when such behaviours are rejected, decisions are being made” (Hull 1983, p. 389, cf. D’Andrade 1995, p. 233).

For other situations (unconsciousness, total ignorance or helplessness) the notion of ‘having no choice’ bears the theoretical meaning of a problem space of zero options. Its discovery by the researcher might be as illuminating for the understanding of behaviour as the explicit recognition of a genuine choice situation.

The subjective representation of a choice situation need not deviate from an ‘objective’ representation in the sense that it only lacks the identification of options. It may also lack the specification of certain consequences or assume incorrect consequences. This may lead to unintended, and sometimes unwanted, situations. The value of directly exploring this subjective representation of a choice situation is situated in the possibility of explaining and understanding such unintended by-products of action. Any theory that purports to cover individual behaviour has to devote attention to such unintentional outcomes (Coleman 1990, Sica 1988). A decision making approach offers the conceptual tools to do so.

Processes of attention and perception
Against the background of bounded information and mental schemes, a main intellectual effort on behalf of researchers is to describe and explain the ways in which various information-selection processes influence the focus of attention of decision makers (cf. Nelson and Winter 1982, H.A. Simon 1987). The relevant perspectives offer two lines of approach, which, apparently, have some common ground. As one of the major constituent processes of decision making these attentional processes will be incorporated in the broad conceptualisation of choice.

A basic idea frequently encountered in behavioural theory, is that an actor interprets a situation according to the interests prevailing at that moment. This assumes that people not only act with motivation, but also that they form a ‘definition of the situation’ that is salient with respect to their prevailing goals. Central to Gibson’s perception theory, for instance, is the idea that perception is always related to a task or a goal by increasing and channelling attention to relevant aspects of observed behaviour (e.g. Gibson and Rader 1979). Other cognitive psychological approaches
similarly assume that encountered information gains relevance and meaning in relation to a person’s goal (cf. Bagozzi and Van Loo 1991, Bandura 1986, H.A. Simon 1987). In the broader perspective of personal development, Maslow’s hierarchy of basic needs interprets a person’s life and considerations with reference to the specific goals that surface at the person’s various developmental stages.

Several sociologically oriented approaches also attribute such importance to the role of (salient) goals in focusing people’s attention. In Schutz’ phenomenological interpretation, an agent’s prevailing interest determines the elements which the individual singles out of the surrounding objective world and determines which elements of the person’s stock of knowledge are relevant to define the situation (cf. Esser 1993). Lindenberg’s rational choice perspective also relies on the situational salience of goals as a sociological aspect of the definition of the situation (Lindenberg 1989). Like Schutz, he assumes that an action situation is governed by one particular goal (or leitmotiv in Schutz’ terms. This particular goal) possibly the outcome of choice itself (cf. Bagozzi and Van Loo, Bohman 1992, Sen 1979) reduces the significance of other (conflicting) goals. But it also narrows and structures the behavioural options and amplifies certain consequences of the considered options (Lindenberg 1989, cf. Esser 1993).

A second line of approach addressing people’s focus of attention and the definition of the situation, reaches back to social learning principles (e.g. Bandura 1977b, 1986, Rosenthal and Zimmerman 1978). This approach asserts that people have the capability of symbolically representing learned aspects of life and the world in general. Bandura distinguishes four important sources of information: personal experience, observational experience, verbalisation by others or otherwise communicated instructions, and emotional arousal. This distinction highlights both the external or social background of information and the internal or personal background. The presumed capacity for observational learning is probably the most important single contribution of social learning theory to studies of human behaviour.

Social learning theorists claim that most behaviour is learned by information extracted from observing modelled examples (e.g. Bandura 1977b, 1986). This capacity to learn by observing others enables people to acquire knowledge and experience (and subsequently to transform these into symbolic representations or cognitive schemes) without having to form them gradually by tedious trial-and-error behaviour. Through observational or vicarious learning and abstract modelling, language, lifestyles and institutional practices of a specific culture are transmitted to new members of society in a very efficient way. It enables people to discover relevant behavioural rules and integrate them into more or less coherent rule systems, such as gender and generation systems or behaviour patterns in occupational situations. Through this kind of socialisation, and through people’s symbolising capability, agents positioned in new situations can usually extract the cues to select the rules and mental frameworks that apply to the situation at hand (Bandura 1986, Burns and Flam 1987, Einhorn 1980).

The mechanisms operating in the two attention-directing approaches relate to each other in an interactive way. While current motives or interest may influence people’s problem space at a certain moment, in turn, the goals that are considered may depend on the people’s definition of the situation. This definition of the situation is usually at least partly a socially acquired product, and social and cultural schemes may prominently provide people with the tasks, goals and standards that are relevant in certain situations (Abeles 1990, Lindenberg 1989).

At the conceptual level, therefore, social learning theory (particularly through the notion of observational learning) establishes an important link between individual decision making and the social environment, as the types of models that prevail within a social milieu partly determine which qualities, among many alternatives, are selectively activated (Abeles 1990, Bandura 1986, Lawrence and Valsiner 1993).
4.3.3. Motivation

Motivation in human behaviour
A central concern to almost all theories of human behaviour is the question about the functions and reasons of performances. Why, after all is said and done, do people behave in certain ways? Behavioural theories of individual action usually capture the directive forces involved in terms of motivation. People are assumed to be motivated to act in a one way rather than another; certain behaviour is preferred because it somehow (better) meets the interests or objectives of the actor. Such objectives have been elaborated differently and emerge under the labels of goals, motives, drives, needs, ends, preferences, values, end states and utilities. They appear as unconscious inner drives and instincts as in Freudian theory, or as explicitly stated and strategically pursued goals as in a game of chess; they may refer to down-to earth needs for food and rest or to spiritual sublimation and well-polished aims of self-actualisation; they may require the assessment of social pressure and expectations or the inner reading of cognitive dissonance and morality.

Whereas most psychological and sociological theories of individual behaviour by assumption distinguish specific goals or actively seek motivational structures, economists tend to collapse motivation into the one-dimensional concept of utility maximisation and refrain from inferences about preference formation, choices among goals and motivational inconsistencies (cf. Earl 1986, Elster 1983b, Hargreaves Heap 1992, Jeffry 1974, Sen 1979). In this line of thought, preferences or goals are considered evident from the behavioural outcomes, given the constraints within which the actor is operating. But since no clues are provided about the subjective framework of decision-makers’ ends, there is no possibility to capture what in the end motivates people. If the aim of study is an understanding of human behaviour, motivation cannot remain indeterminate, but must be specified in terms of contents, structure, formation and origin (cf. Brennan 1990, Easterlin 1975, De Jong and Fawcett 1981, Elster 1983b Friedman et al., 1994, Leibenstein 1982).

Contents of motivation
Social and psychological studies have come up with an enormous number and variation of motives of individual behaviour. Some of these rest on purely empirical investigations, others fall back on theoretical models of human behaviour, such as Maslow’s theory of basic needs and psycho-analytical approaches in the line of Freud and Erikson. For conceptual purposes, it is illuminating to organise this vast array of motives into a manageable framework and to establish their possible relations.

One perspective on motivation relates to Piaget’s developmental psychology, which assumes that motivation for behaviour arises from a mental incongruence between (self)observation and beliefs held by the individual. This issue is picked up by other cognitive traditions, such as social learning theory (Bandura 1977b), cognitive dissonance theory (Festinger 1957), regret and disappointment theories (Bell 1982, 1985) and personal construct theory (Kelly 1955). Comparable conceptualisation is also applied in the field of housing and moving house (Tazelaar 1985, Voets 1994).

Another general-level perspective couches motivation in terms of maintaining and possibly improving the quality of life (cf. De Jong and Fawcett 1981). From Kahneman and Tversky’s Prospect theory, for instance, the avoidance of loss emerges as a principle directive of behaviour. Improvement in life may be seen as the other side of the same continuum in motivation. This dimension of improvement would not only refer to quantitative increase, but also to qualitative change in the sense of growth, development, exploration and unfolding. The economic concept of

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1 For a discussion about the differences between these concepts, see for instance Friedman et al., (1994) and Rokeach (1973).
utility maximisation can be viewed as a very specific form of motivation.

Both this mental congruence and improvement remain relatively ‘empty’ concepts of motivation. Their substantiation has been elaborated differently. Thus, with respect to migration behaviour, De Jong and Fawcett (1981) based on both empirical and theoretical studies identified seven conceptual categories that seemed to represent psychologically meaningful clusters: wealth, status, comfort, stimulation, autonomy, affiliation and morality. In the field of fertility, Hoffman and Hoffman (1973) proceeded in a similar fashion. They developed a framework of satisfactions and costs of children: expansion of the self; primary group ties and affiliation, stimulation, novelty, fun, creativity, accomplishment, competence; power over others and vicarious achievement possibilities. Their conceptual framework was elaborated and operationalised in the cross-national ‘value of children project’ in the mid-seventies by Fawcett and others (e.g. Bulatao 1982, Fawcett 1972, 1983) and for the Netherlands by Niphuis-Nell (1981) (see Section 3.3.5). Greenhalgh distinguished socio-economic security and mobility as the two general motives that changed the benefits of children during Sinic fertility transitions (Greenhalgh 1988). Friedman et al., (1994) even propose a single ultimate value in reproductive behaviour in the form of uncertainty reduction, and assume that all kinds of values of children can be projected on this single general dimension.

Elaboration of the contents of motivation for behaviour in general is spread throughout the social and psychological disciplines. Lindenberg, for instance, suggests two main motivational clusters (physical well-being and social approval) with a third, conceptually slightly different, candidate in the form of minimisation of loss (Lindenberg 1989). Rokeach does not collapse motivational dimensions in so few categories, but lists more loosely a number of general goals or ‘preferable end-states of existence’: power, wealth, fame, creativity, comfort, security, order, harmony, inner peace, salvation (Rokeach 1973). A more structured approach from a developmental perspective is Maslow’s theory of human motivation (Maslow 1970). Maslow identifies five basic needs (physiological, safety, belongingness and love, esteem and self-actualisation needs) and arranges them in hierarchal order with the underlying idea that the ones higher up in the hierarchy only become prominent, once the lower needs have been met to a sufficient degree.

In effect, it is possible to locate the various single goals or clusters of goals distinguished by Rokeach (1973), De Jong and Fawcett (1981), and Hoffman and Hoffman (1973), in a Maslowian perspective. In a condensed form and pertaining to societal change rather than personal development, Maslow’s motivational layers can be encountered in Inglehart’s materialist and postmaterialist orientations (Inglehart 1977, 1990). Similar findings can be concluded from Bulatao’s study on the relation between demographic (fertility) transition and transition in the value of children (Bulatao 1982, cf. Moors 1992). Although Lindenberg himself rejects a hierarchical relation between his two basic goals, to a certain extent these could also be situated in the lower or higher segments respectively of Maslow’s motivational structure.

The hierarchical feature of Maslow’s theory has not remained without criticism. There are various examples of the Maslowian order being violated. Thus, the famous Chagnon account of Yãnomamö life (Chagnon 1977) shows that physical health, and even mere survival, can structurally be subdued to reputation and prestige, as people regularly engage in activities that expose them to high chances of severe injury and death and the community as a whole to outright annihilation. Still, the basic idea of hierarchy is a useful notion for ordering and unifying values and disvalues in human behaviour (cf. Vendrik 1990). Moreover, Maslow’s developmental perspective is at least partly supported by Inglehart’s (1977, 1990) conclusions about a materialist / post-materialist distinction, and by the observed change in the value of children (Bulatao 1982, Moors 1992). Both suggest that the affluent and educated typically regard lower-order needs as relatively unimportant, not so much because they are not valued but because they are taken for granted, which frees them to place greater emphasis on higher-order needs, for instance, on love,
competence, and self-actualisation (cf. Rokeach 1973, p. 327). Inglehart’s studies suggest a two-step hierarchy with safety and sustenance needs on the one hand and higher-order needs on the other hand, but find little evidence of any specific ordering within the latter group (Inglehart 1977, 1990).

Criticism of Maslow’s motivation theory also extends to the presumed universality of the distinguished needs. Many perceive in his representation a Western, if not American, if not American middle-class bias (cf. Rokeach 1973, p. 17). As Chagnon’s study shows, prevailing culture-specific ideational systems play a prominent role in the definition and ordering of goals (cf. Lesthaeghe and Moors 1992, Lesthaeghe and Surkyn 1988a). Moreover, developmental perspectives in psychology suggest that motivation also depends on the specific position in the life course. Erikson (1980) and Havighurst (1972), for instance, suggest a number of standard challenges which dominate people’s orientations in different stages of life. Other accounts of a degree of universal applicability are attributed to Lindenberg’s model of physical well-being and social approval; to a lesser extent to Greenhalgh’s goals of security and mobility; and, on purpose, to the motivational elements included in the comparative value of children studies. Motivation theorists acknowledge the shortcomings in this respect, with regard to one model more than to another, but they usually maintain that the conceptual bonus of the effort to identify more universal and more ultimate values consists of a reference point to interpret the diversity and unity of human behaviour in different settings (Greenhalgh 1989, Maslow 1970). Lindenberg (1989) is the most explicit in this respect as he suggests that the situational variability of more imminent goals is located in the specific institutional settings, which determine how the more ultimate and universal goals can be accomplished.

The criteria for including the different general goals or motives in conceptual frameworks do not correspond exactly. Lindenberg’s two basic goals are considered to enclose or represent all other goals; the motivation sets presented by De Jong and Fawcett, and Hoffman and Hoffman respectively assume clusters of all major goals relevant in the field of migration and fertility; Greenhalgh posits security and mobility as the overriding motivational areas for (Sinic) fertility; and Maslow’s categorisation of basic needs is based on their implication of progression in life. Still, there are other perspectives to identify motivation, although usually somewhat more abstract. A synthesis of these considerations on the substance of motivation remains a difficult task. Many, if not most, of the goals people directly aim at in daily life are loaded with a high level or situational specificity. A main assumption in this study, however, is that a relatively limited number of motives may be identified, with such a general validity and importance, that they can be described in the sense of universal and ultimate goals for behaviour. Almost by definition, these goals are somewhat abstract and concern multidimensional classes or clusters of motives rather than single, narrowly-circumscribed goals. Furthermore, such clusters cannot be completely mutually exclusive and complementary; interactions and interdependencies will probably be the rule rather than the exception.

In a behavioural perspective, goals must not be understood in a narrow materialistic sense, but should also involve aspects like emotional satisfaction, mental consonance and self-fulfilment. Such ‘pleasurable inner states’ enter importantly into the explanation of behaviour, although not necessarily as the conscious goal of behaviour (Elster 1983b, p. 10, cf. Rokeach 1973, p. 12). Drawing on existing conceptualisations of motivation concerning both general behavioural models and those developed in the field of fertility and on empirical findings with regard to reproductive behaviour, an array of ultimate goals could include the following clusters to provide an initial structure of motivation:

- physical well-being (including good health, the need for food, sexual desire);
- material well-being (pertaining to, e.g. affluence, wealth and comfort);
- safety (as related to security, stability, protection, structure, salvation);
• affiliation (belongingness, integration, affection, love, intimacy);
• social status (social approval, prestige, recognition);
• power (influence, control over others);
• self-esteem (desire for efficacy, competence, achievement, autonomy, morality, dignity);
• pleasurable inner states (joy, satisfaction, reduction of uncertainty and cognitive dissonance, freedom from fear);
• creativity (self-actualisation, growth, stimulation, novelty).

**Motivation structure**

Whereas ultimate goals may be conceived as being shared, the ways to attain such goals can be very different and depend crucially on the contextual and personal situation. Using an example of Lindenberg, in contemporary Dutch society both men and women can attain social status by pursuing a professional career. But while women can also obtain it through their relationship with a male partner, men can by and large not attain status via their partner (Lindenberg 1992, p. 291).

Individual characteristics (such as age and gender), personal experiences and, importantly, the overarching institutional structure of society determine the nature of the different behavioural routes to achieve ultimate goals. Motivation, however, requires the internal representation of these instrumental relationships. Cognitive approaches assume that people’s mental schemes representing these causal relations reflect the institutional and personal backgrounds (e.g. D’Andrade 1995, Eisenstadt 1989). These causal schemes may represent complex chains of instrumentally related behaviours. In Lindenberg’s example, for Dutch women to obtain a desired degree of social status, they strive for a good professional career. This may require postponing or even refraining from childbearing, for which they may want to use the pill, which, in turn, may require the purchase of pills in a pharmacy or an initial visit to a doctor for a medical check-up (and again the actions required to get there, et cetera). All these behaviours (the visit to the doctor or drugstore, the purchase of pills, their use, postponement of childbearing, developing a career) emerge one by one as the immediate goal to achieve to ‘produce’ in Lindenberg’s terminology the ultimate goal of social status. To the extent that such cognitive causal schemes conform socially acknowledged meanings and strategies, they represent social or cultural schemes (Abeles 1990, D’Andrade 1995, Denzau and North 1994, Eisenstadt 1989, Wyer and Gordon 1984) or ‘social production functions’ (Lindenberg 1989).

There is not necessarily a one-to-one correspondence between any one instrumental objective and any ultimate goal. Usually, the most general goals are bolstered by various instrumental behaviours; for instance, social status can be attained through a professional career (work), but also by attachment to a high-status partner (marriage) or by achievements in the field of sport or art (see Figure 4.2). On the other hand single instrumental behaviours may be multi-faceted, in the sense that they contribute to the attainment of several ultimate goals: a highly paid job increases a person’s status, but may also gratify her desire for creativity, material well-being, power and self-esteem. Similarly, the value of children studies demonstrated that in many settings childbearing is quite overdetermined; this overdeterminance can be reduced if specific (social, cultural, economic) developments provide alternatives for the multiple functions of children (Fawcett 1991). The higher level, instrumental goals which have the most weight in obtaining the set of ultimate goals (whether hierarchically organised or not), usually represent major life domains. This is often the case with fertility, but also family life in general, or a working career.

The multiple causal relations not only exist between the instrumental behaviours and the highest goals, but also between the various behaviours and goals at the lower levels. The highly paid job may, for instance, be obtained by extensive education and a limited number of strategically planned pregnancies (family planning). And even if education has an effect on ultimate goals via the higher level goal of having a job (work), it may also have a direct relation to some ultimate goal, for example to self-esteem. Similarly, marriage may directly satisfy the need for love and companionship (affiliation). Given all such perceived causal relations and their attributed
importance, human behaviour can be thought of as directed by an intricate motivation structure, which is a key to understanding people’s behaviour (D’Andrade 1995, p. 233).

In accordance with the notion of bounded rationality, at no time will an agent be aware of all the intricate chains of causality. Moreover, the most general goals sometimes only distantly influence behaviour and people often only attribute their actions to more immediate objectives. Often the causal relation between the final and instrumental goals is only vaguely or subconsciously perceived and on many occasions, people do not even have exactly circumscribed goals or remain undecided about what to strive for (cf. Bohman 1992, Elster 1983b, Hargreaves Heap 1992, Rokeach 1973, H.A. Simon 1978, 1979a). In these situations, it is unlikely that a person behaves in a manner that is substantively rational with regard to the comprehensive set of instrumental and final goals. At this point, the issues of procedural and expressive rationality are touched upon to account for people’s behaviour (see Sections 2.3.5 and 2.3.6). This concerns people’s considerations to value segments of their value system as an expression of making sense of the world and the self (Jeffry 1974, Hargreaves Heap 1992, Sen 1979).

Given this study’s focus on reproductive behaviour, people’s motivation structure can be rendered explicit beyond the formulation of universal or ultimate goals. Fertility behaviour, then, occupies a central position in the motivational structure. Children are conceptualised here not as goals in themselves, but as instrumental means to ‘produce’ directly or indirectly and more or less consciously ultimate values as suggested in the previous section. A further explicitation of the fertility motivation structure can be attained by integrating Bongaarts’ (1978) model of proximate determinants and Davis and Blake’s (1956) framework of fertility into a choice perspective on fertility (see Section 3.3.3). The proximate determinants at least the behavioural determinants
Figure 4.3. Intermediate fertility determinants in a choice perspective

Since not all proximate determinants will be explicit factors in fertility decision making, the model of intermediate determinants represents a task environment as regarded by an observer and not the problem space as viewed by the individual agent. This is aptly described by McNicoll and Davis who assert that:

éáÅbáÆë mediated through the person’s cognitive system. Social learning theorists assert that the motivational process linking environmental stimuli to behaviour, involves aspects of interpretation, representation and organisation of information. Equally, they maintain that many emotional predispositions are acquired by processing information related to personal experiences or to observing others in situations where emotion-laden symbols provide the basis for affective learning (Bandura 1986, Bower and Hilgard 1981, Novaco 1979). Once such associative information is acknowledged and symbolically stored in memory, people may, upon recognising certain cues in a situation, activate specific segments of their motivation structure that they have learned to be relevant. In this way they can define a choice situation as relevant for attaining social status or for satisfaction of creative desires; or they can judge whether moral or ethical principles apply (such as the value of loyalty, altruism and solidarity within family or friendship relations) or materialistic and opportunistic ones such as in purely bureaucratic or business relations.

The point cognitive psychologists want to make with regard to motivation, is that people do not
simply react to stimulus events from their (internal or external) environment, nor are they automatically steered by implants from their individual history. Instead, capitalising on a model of man with the capacity for reflection, they assume that motivation is produced through processes that involve cognitive activity. They posit that the cognitive representation of outcomes of certain behaviour represents the principal mechanism involved in motivation (Bandura 1986, p. 91, Bower and Hilgard 1981, p. 467, Rosenthal and Zimmerman 1978, p. 246, Tenbruck 1989, p. 20). People interpret events and experiences and organise the information derived from them into beliefs about what leads to what. Future events cannot serve as determinants of behaviour, but people can convert future consequences into current motivators by representing foreseeable outcomes symbolically. The mechanism that cognised futures become temporary antecedents to actions, is the (implicit) backbone of most choice theories. It should be self-evident that outcome expectations are only motivating if they represent a functional value to the actor (Bandura 1986, p. 68, cf. Ajzen and Fishbein, 1980).

Although the cognitive representation of outcomes of certain behaviour is assumed to be the principal mechanism involved in motivation, social learning theorists also distinguish a second important cognitively-based mechanism. This second major mechanism of motivation operates through the intervening influences of goal setting and self-regulated standards by which performance is evaluated. When individuals commit themselves to explicit goals, perceived negative discrepancies between what they do and what they seek to achieve create dissatisfactions that serve as motivational inducements for action (Bandura 1977b, Festinger 1957, Tazelaar 1985, cf. Rokeach 1973). Prospect theory assumes that some subjective position, such as a person’s status quo, functions as an anchor point to judge possible gains or losses implied by foreseeable outcomes of behaviour and thereby influences people’s motivation (Kahneman and Tversky 1979, Maule 1989). Such a status quo position tends to develop over the life course: if past performance has achieved a certain aspiration level, or has failed repeatedly to do so, people tend to raise or lower their standards accordingly (Bandura 1977b, 1986, 1991, Inglehart 1977, H.A. Simon 1957, 1978). This standard-setting mechanism is echoed in Easterlin’s fertility theory (Easterlin 1978b, 1980). Here, new generations are assumed to adjust their reproductive behaviour in such ways as to maintain a level of living that is at least equal to that which they experienced during their childhood at their parents’ home. The various aspiration-setting mechanisms sustain the relevance of Simon’s notions of satisficing in choice theory (H.A. Simon 1957, 1979a). As judgmental reference points may be thought to arise from self-comparison and life experience, they can also be the result of social comparison. The cognitive process involved in such social comparison can be described as one in which people take actual or fictitious others as a reference point in order to interpret their own situation (Boudon 1986, Buunk 1992). The essence of most social comparison theories like relative deprivation theory and equity theory is that as the welfare of relevant others increases, the relative welfare of the individual observer falls (Messick 1985).

The two mechanisms of cognitive anticipation of outcomes and aspiration setting refer to the motivation processes that are among the major constituent processes of learning and a broad understanding of decision making.

Whereas social learning theory accepts the role of internal sources of motivation (such as emotional arousal or motivation related to personal experience), it focuses on the function of the social environment in this respect. As social beings, people observe the conduct of others and the occasions on which it is rewarded, ignored, or punished and there is ample support for the idea that the value and force of such vicarious motivators are important determinants of people’s motivation (Bandura 1986). Also the acquisition of evaluative standards (social, moral, ethical), is assumed to occur mostly by imitation of the standards modelled by family, peers, and prestigious figures in the media (Bandura 1991, Bower and Hilgard 1981).
The significance of this vicarious motivation can be apprehended if one acknowledges that other sources of learning will never have the capacity to transmit information about the incentives contained by the social environment in sufficient amount and nuance. It is difficult to imagine how individual experience or explicit communication alone can accomplish similar results (Bandura 1986, p. 19). However, these other sources of learning remain important in the understanding of motivation and behaviour. Although personal experience as a source of motivation has an idiosyncratic flavour, the commonality of significant experiences and in a broader scope, life courses in general can have structural impacts. Also direct communication) personal communication, teaching, information campaigns) can have structural effects on people’s motivation if it is shared in sufficient measure, even if motivation thus attained often is less firm and more easily challenged by incongruent incentives.

4.3.4. Styles of decision making

*Departing from standard choice procedures*

The studies on decision rules and heuristics have shown that the choice processes within people’s heads appear in much greater variety than standard choice theories assume. The internal rules and heuristics that are applied to select one of the available alternatives refer to how different elements of decisions are combined and weighted. Most value-expectancy (VE) theories assume a multiplicative-additive rule, whereby the attractiveness of a behavioural option is specified by the sum of the probabilities of the consequences associated with the option, weighed by the value or utility of that consequence. In micro economics, the subjective expected utility (SEU) theory additionally assumes a maximisation principle which asserts that all available alternatives are surveyed together in this way and that subsequently the one with the highest score is selected. In other approaches, such as the psychological theories of reasoned action and planned behaviour by Fishbein and Ajzen, the focus concerns the likelihood of the occurrence of one specific alternative. Implicitly here, too, maximisation is assumed in a situation of competing alternatives (cf. Bagozzi and Van Loo 1991).

The rule of maximisation of utility is, however, much challenged because of the highly demanding cognitive effort associated with it. Ranyard suggests that this type of decision rule represents the upper limit of human decisional competence (Ranyard 1990, p. 296). People are assumed to rely very frequently on a limited number of simpler heuristics in order to reduce the complex task of assessing probabilities and predicting values in the face of the computational limitations of the human mind, (Earl 1986, Tversky and Kahneman 1974), to limit the costs and psychological stress involved in decision making and extensive calculation (Earl 1986, Etzioni 1992, Janis and Mann 1977, Leibenstein 1980, Nelson and Winter 1982), or because of a simple lack of relevant knowledge and uncertainty (O’Driscoll and Rizzo 1985, Rutherford 1988, Newell and Simon 1972, Tyszka 1989). In this respect, Miller’s notion of ‘the magical number seven’ (G. Miller 1956) was applied practically in Fishbein and Ajzen’s behavioural theory to determine the maximum number of consequences considered in the model.

Given the costs and limitations involved in decision making, Miller and Starr argue that it is always questionable whether the optimum procedure in choice problems is always to search for the optimum value by means of maximisation (Miller and Starr 1967, p. 51). In various situations it might not be rational to waste time and effort in comprehensive maximisation, but better to rely on simpler forms of decision rules (Janis and Mann 1977, Leibenstein 1980, Prendergast 1993, Vlek 1990). In this perspective the selection of heuristic devices might be seen as an intrinsic consideration of the choice process. Payne et al., concluded that, in order to minimise cognitive effort and maintain a high level of accuracy, people can and do adapt their choice heuristics in response to changes in the structure of available alternatives and to the presence of time pressure.
(Payne et al., 1988). This would imply a cost-benefit approach which can easily be integrated in a rational choice approach by including the costs of executing the decision process. Leibenstein’s behavioural choice theory, for instance, interprets the level of calculation used in decision making as a variable (Leibenstein 1980). Esser’s two-stage model of rational choice similarly asserts that the application of rational calculation (in the sense of utility maximisation) is preceded by a decision whether or not to engage in extensive information processing or to follow well-tried habits or routines (Esser 1993). A general implication of such choice nuances, is the acknowledgement that decision making refers to a process rather than to a instantaneous cognitive product.

**Decision rules and heuristics**

The literature on choice processes suggests a variety of alternative decision rules. Basically these heuristics boil down to reducing the processed information during decision making, either by limiting the number of information bits or in terms of leaving out types of information. The ‘equal weight rule’, for example, examines all alternatives and the values of all consequences, but ignores information about the associated probability of each consequence (Payne et al., 1988). Elsewhere, Payne distinguishes four basic risk dimensions: the probability of winning, the amount to be won, the probability of losing and the amount to be lost and describes how in situations of decision making under risk, of these four dimensions, the perceived risk was determined primarily by the probability of losing (Payne 1980, Slovic 1967). Prospect theory by Kahneman and Tversky (Kahneman and Tversky 1979, Tversky and Kahneman 1981) presents a further refinement of these findings by differentiating the framing of decision in terms of gains or losses. It states that in the domain of gains people tend to be risk-averse, and in the domain of losses they exhibit risk-seeking preferences.

Often the evaluation of behavioural alternatives operates along either the dimension of the consequences of behavioural options: considering the values of several options on a single consequence before information about a second consequence is processed) or along the dimension of options themselves: processing information about multiple consequences of one alternative before information about a second is processed. Tverskys’s ‘elimination by aspects’ is a typical example of the first kind of simplifying heuristics. It starts with the consequence that is considered the most likely and then eliminates all alternatives that have a lower value for that particular consequence. This process can be repeated with a consequence of lower importance until only one alternative remains (Tversky 1972).
Representative for the second type, and embraced as the most prominent alternative to maximisation of expected values, is the rule of satisficing, as advanced by Simon in relation to his notion of bounded rationality (e.g. H.A. Simon 1957). This asserts that alternatives are not examined simultaneously but sequentially, and that one is chosen if its consequences equal or surpass a (dynamically defined) aspiration level. Others have taken the argument even further and suggest that people usually employ even simpler heuristics than encompassive multiplicative-additive procedures or employ them only after filtering a limited number of alternatives and consequences from the choice set. Various additional decision rules or variations and mixtures can be found in publications by, for instance, Earl (1986), Montgomery (1989), Payne et al. (1988) and Ranyard (1990). Although such simplifying heuristics often work reasonably well and can even be highly accurate in some choice situations, they can also lead to severe and systematic errors (Payne et al., 1988, Tversky and Kahneman 1974).

Although the relevance of choice heuristics is increasingly acknowledged (e.g. Earl 1986, Plott 1991), as yet no systematic knowledge about the selection of rules has been developed. This feeds the general complaint that all that has been generated by research in this field is a list of heuristics without any substantial theory of when any particular heuristic will be used (Rutherford 1988, p. 50, Earl 1986, p. 204, Einhorn 1980, p. 1). However, since the notion of choice heuristics has demonstrated its relevance, it should not be abandoned from descriptive choice theory (cf. Wallsten 1980, p. 220). Nelson and Winter, for instance, argue that processes of action that involve a considerable amount of deliberation should be distinguished from those that involve more or less mechanical following of a decision rule (Nelson and Winter 1982). More importantly though, they suggest that if one knew that a certain class of action was the result of individuals following a prescribed decision rule, this would seem to be an interesting fact in itself, regardless of the provenance of the rule. Such information might lead the researcher to study the decision rule being employed and investigate why it is what it is, involving some theory of decision rule creating and change.

In fact, research did come up with some suggestions of patterns of decision styles. Ranyard suggests that elaborate decision rules (such as applied in VE and SEU models) may be applied to important decisions which do not have a dominating or single satisfactory alternative; and that on the other hand, simpler rules can be applied for less important decision problems (Ranyard 1990, p. 296). Arguments based on a similar distinction between important and less important choices have been put forward by Earl (1986), Janis and Mann (1977) and Leibenstein (1980). Earl also suggests that the choice style will often take the form of routine decisions if an environment is stable but information is costly. On the other hand, in turbulent situations too (for instance if people become uncertain when presented with new or confusing information) decision-makers can fall back on routine behaviour to try to find familiar patterns (Earl 1986, p. 56-57).

In a more normative sense, Etzioni advanced the idea of ‘mixed scanning’, suggesting that organisations and governments should use extensive information search and elaborate or maximisation-like choice strategies for fundamental policy-making and in times of crisis, while they could rely on simpler forms of satisficing rules for minor decisions that are basically in line with the major policy direction (Etzioni 1967). Although initially Etzioni’s ideas concerned situations of public choice, he and others suggested that in the area of private choice too a similar distinction could (or should) be made between decision making about life events and minor considerations. Both Earl (1986) and Leibenstein (1982), on the other hand indicated that also with regard to important life decisions (such as the age at marriage or the number of children) people often rely on conventions and social rules and hardly use calculative choice processes, until challenged by new information that activates other decision mechanisms. While this may seem typical in developing countries, Earl also cites a study of Richards (1985) which concluded that a majority of Australian couples did not engage in deliberate decision making or even consider the alternative of remaining unmarried or childless (Earl 1986, p. 59).
Rutherford takes a different perspective as he states that the application of simplifying rules not only depends on individuals’ adaptation to task complexity and decision costs, but can also be the result of a simple lack of knowledge (Rutherford 1988, p. 51, cf. O’Driscoll and Rizzo 1985, p. 119). This, of course implies the important conclusion that people will be able to make better choices if they have better access to information. As a general observation, the style of decision making will depend on the socio-cultural environment, the stage in the life course, personal experience and the decision problem at hand: stopping the process of childbearing often involves more deliberation than starting and spacing; and marriage, breastfeeding and sexual abstinence is more likely to involve routine or institutional decision making than divorce, contraceptive use or abortion; (Bulatao 1984, Hull 1983).

**Routine and institutionalised behaviour**

Many behavioural scientists altogether reject the concept of choice as a major mechanism in the formation of behaviour. They argue that in most day-to-day circumstances behaviour rests on habits (rules related to personal experience and repetition) and routines (rules related to socially observed behavioural patterns). Even when placed in situations where cardinal issues are at stake with respect to the further life course (such as marriage and childbirth or the number of children) people often standardly follow the directives of social institutions and conventions. The application of such rule-following decision making may occur for a variety of reasons, but prominent among them are ignorance and uncertainty about outcomes of individual choice, social pressure and sanctions, and the (subjectively perceived) obviousness of the value of behaviour implied by such rules. In such cases, the entire aspect of deliberation is sometimes excluded from the process of behaviour formation. Schutz’ interpretive approach, for instance, emphasises the role of habits, routines and recipes. Central to his phenomenology is the acknowledgment that people are able to immediately recognise a situation at face value and know the rules that pertain to it without noticeable contemplation (Schutz 1973a, 1973b). It is the common-sense ‘obviousness’ of the situation that implicates certain behaviour to be performed without necessary extensive orientation and calculation. Because these behavioural rules work in recognised situations, and because they avoid apparently unnecessary additional search for information, they can be taken for granted and provide the basis for much daily behaviour (Schutz 1976c, cf. Hargreaves 1980).

Giddens’ structuration theory (Giddens 1984) reflects an analogous representation of the mechanisms that underlie day-to-day behaviour. Institutional approaches stress the intimate relation between the internally held standard rules for behaviour and the social institutions that reflect the historically evolved solutions to recurrent and fundamental problems which have faced people (and society at large)(cf. Burns and Flam 1987, Eisenstadt 1968, North 1994, Schotter 1986). The degree of consciousness involved in such routinisation and institutionalisation is a matter of discussion. Most theoretical perspectives addressed here, including Schutz’ phenomenology, agree, however, on the prominence of human beings as knowledgeable agents with respect to the rules and repertoires of day-to-day conduct.

At first glance phenomenological perspectives seem incompatible with theories based on decision making that usually rely on the assumption of explicit deliberation (e.g. Friedman and Hechter 1991, Prendergast 1993). Although many interpretive approaches are allegedly intellectually worlds apart from choice theory, there is sufficient reason to maintain that they can be combined in an integrated perspective. Etzioni (1992), for instance, offers a new decision making model where normative-affective considerations dominate the choice process. He reserves the term ‘decision making’, to deliberative choices, while applying the term ‘choice’ more broadly to all selections among options, however limited the scope of information process, deliberation and explicit considerations. His central statement is that

“... normative-affective factors shape to a significant extent decision making, to the extent
Etzioni’s perspective is remarkably similar to Schutz’ as he states that most choices entail no deliberation at all because the ‘right’ choice is ‘self-evident’. Often actors choose a course of action without exploring alternatives, because it is the right way to go, because it feels right. Nevertheless, Etzioni defines his approach explicitly in terms of choice (cf. Section 4.2.2). The economists Nelson and Winter seem to agree with this social-psychological perspective. They similarly stress that there is a fundamental difference between a situation in which a decision-maker is uncertain about a future state and a situation in which the decision maker has not given any thought to whether this particular outcome matters or not. They conclude that the problem of whether expectancies are included in the decision-maker’s considerations at all, relies on an adequate incorporation of bounded and procedural rationality, and calls for a theory of attention, not a theory that assumes that everything is always attended to, but that some things are given little weight (Nelson and Winter 1982, p. 67).

Leibenstein (1980, 1982) and Esser (1993) also elaborate the prospects of integrating routine and non-calculative behaviour into a choice framework. Esser maintains that an interpretive analysis, like that of Schutz’, need not reject rational choice theory. Both he and Leibenstein argue that if the strict assumptions of rational choice theory are relaxed, there is no need to reject the applicability of the concept of choice to most human behaviour. They suggest that before people engage in actively identifying a choice situation and gathering and evaluating information, they first pass through a stage in which they determine whether or not to follow a prevailing habit, routine or standard rule. This implies the (conscious or subconscious) recognition of certain signs that define the situation proper for routine behaviour (see also Piaget and Inhelder 1973, p. 3). The steeply decreasing marginal utility of additional information in the presence of already proven and apparently sufficient routines and recipes halts the process of conventional rational choice (Esser 1993). Corbin, furthermore, asserts that although maintaining the status quo, following routine behaviour or sticking to a made decision can be viewed as a behavioural option, its status is different from other options: the associated level of uncertainty is usually lower and the responsibility of following that course of action is felt as less than after decision making (Corbin 1980). Similar inherent costs of decision making can be found in the work of others (e.g. Collins 1993a, Janis and Mann 1977, Leibenstein 1977, 1981). These considerations would indicate that only a sufficiently pressing need for alternative behaviour, combined with a sufficient awareness or certainty about the presence of another frame of behaviour, would lead someone to deviate from the original relevance structure and start a ‘rational’ process of inquiry. Leibenstein additionally suggests that explicit calculation in the process of choice is a matter of degree rather than an everything-or-nothing issue (Leibenstein 1980, 1982). The extension of standard notions of rationality and decision making on which Leibenstein and Esser rely, importantly contributes to the understanding (within a framework of choice) of behaviour that is usually cast in terms of ignorance and unthinking adherence to rules.

**Decision making as a process**

Most choice theories represent a static approach of decision making. Usually they (implicitly) assume that the time involved in the process of decision making and the sequence in which aspects of decision making occur have no significant influence on either the outcome or the understanding of choice. Even less do they consider how choice and its characteristics and dynamics change over time (in a lifetime or even historical perspective). According to Fawcett, the notion of choice as a process entails at least three different, not necessarily mutually exclusive aspects (Fawcett 1991, p. 14). First there is the specific construction of choice and rules of decision making, recurring in
models of decision making and for instance leitmotivs in the work of Simon and Leibenstein. These issues concern how the choice situation in terms of options and consequences is conceived, and what kind of heuristics and decision styles are applied to evaluate information. These issues were discussed in the previous two sections.

A second aspect may refer to ‘sequential decision making’, that is, the successive decisions as elements of a career within a dynamic life course context. With respect to fertility, Bulatao (1981), for instance, found decisively different motivations for childbearing across parities, but he, and other authors, also suggested shifts in constraints and styles of decision making (e.g. Bulatao and Fawcett 1981, Fawcett 1983, Leibenstein 1981, Namboodiri 1983, M.B. Smith 1973). Chapter 6 will deal with this specific life course dimension of decision making. This section concerns the third aspect of decision making as a process; the sequence of stages in the process of decision making.

Choice as a product and a process of thought is intrinsically related to Simon’s notion of procedural rationality. Situated in a broader cognitive framework this pertains to the processes of attention and subjective representation of a decision situation, the search for information and the reasoning processes applied to draw out the consequences of behavioural alternatives and to simplify the choice problem (H.A. Simon 1987, p. 27). The acknowledgement of decision rules and heuristics, in fact, implies the existence of phases in the choice process. Thus, Kahneman and Tversky’s prospect theory poses two phases: an editing phase in which a decision frame is developed in terms of gains and losses relative to some reference point, and a phase in which alternative actions are evaluated on the basis of some rule or criterion. Sometimes, decision rules themselves are described in terms of processes. Montgomery’s dominance search model of decision making, for instance, assumes four phases in order to find a promising alternative (Montgomery 1989). A pre-editing phase roughly scans possibly relevant alternatives and consequences; the second phase determines an alternative that has a reasonable chance to be seen as dominant; in the dominance-testing phase the decision-maker tests whether the selected alternative is dominant over other relevant options; if in the third phase the selected alternative is not found to be dominant, a last phase of dominance-structuring is required to manipulate information about alternatives and consequences in such a way that a dominant option is obtained.

Several suggestions have been put forward to describe how people’s burgeoning desires concretise progressively and develop into action step by step (cf. De Jong and Fawcett 1981, Voets 1994). Others put more emphasis on the cognitive activities involved in the choice process rather than in the development of the contents. A seminal contribution in this respect is the work by Janis and Mann (1977), whose enlightening model describes how a process of choice is initiated and may proceed stage-like until a certain decision is implemented in behaviour (and is adhered to over time). The model distinguishes five sequential phases which they suggest to be broadly applicable as a starting point to a wide variety of choice situations:

- **Appraising a challenge** marks the beginning of the decision making process, when a person is sufficiently challenged by an event or new information;
- A stage of **surveying alternatives** indicates the start of a search process in which the person focuses attention on alternatives, either by scanning his memory or by seeking information from the environment;
- In the stage of **weighing alternatives**, the person proceeds to an evaluation of a number of promising alternatives in the effort to select the appropriate course of action;
- Subsequently the decision-maker **deliberates about the commitment** to implement the action, including considerations of self-esteem and social esteem if he were to forsake his decision;
- A last stage consists of **adhering despite negative feedback**, in which a decision is clung to and rationalised even in the face of adverse new information.
The duration of the whole staging process may range from a split second to significant portions of people’s lives. In some instances the choice situation is easily surveyable, relevant information is internally available and the preferable course of action is evident, which allows reduction of the decision making process to an insignificant instant. In other circumstances, people may need a very long time to inform themselves; alternatives may involve high degrees of uncertainty and decision makers may linger for extensive periods in the stage of evaluation. Rossi (1955, cited in Voets 1994, p. 8), for instance, observed that with respect to relocation behaviour people usually deliberated for approximately a year before they eventually moved. Van Luijn and Parent (1990) demonstrated that one-fifth of Dutch women of childbearing age spend an average three and a half years in uncertainty about whether or not they want children before they reach a conclusion. Another cause for a prolonged stay in the decision making process is the possible distance between the moments of reaching a decision and actually implementing it. External factors may delay an intended action for considerable time. A housing shortage or the state of the economy may postpone (or even cancel) a migration or labour force participation. For the case of having children, there is an average waiting time between exposure to the risk of pregnancy and pregnancy itself of about seven months. As one could argue that it is children that people choose to have rather than pregnancies, one could add another nine months for the duration of pregnancy as well. However, such durations for getting pregnant and pregnancy themselves may already be incorporated in the timing of the decision process itself.

Janis and Mann’s staging model comprises cognitive-behavioural insights about the role and changes of people’s mental schemes during the choice process. The specific challenge faced in the first stage can be thought of as being related to certain goals of the individual and makes the decision-maker more attentive to relevant domains in his information sources - internal or external. During the stage of deliberating about commitment, the person engages in a process of more or less internalising his choice. Not only the consequences of the chosen alternative function as motives for the action, but also aspects intrinsic to the decision itself (the avoidance of internal cognitive and social dissonance from revocation of the decision) become motivators for the behaviour. During the post-decisional stage this contributes to the modified mental framework with which a person attends and interprets new information and rationalises a taken course of action (cf. Etzioni 1992, Montgomery 1989). Van Luijn’s study of ambivalence in fertility decision making extensively uses Janis and Mann’s dynamic choice model. She also hints at the role of changing mental schemes when she concludes that most women who were ambivalent about the desire for children eventually reached a solution by shifting the attention to different elements included in their problem space and by changing the meaning of such elements (Van Luijn 1996, p. 179).

Janis and Mann present the five stages as a schematic description of the choice process that a ‘vigilant’ decision maker employs in reaching a decision. Many other representations of the choice process (e.g. Corbin 1980) as well as most decision rules can be situated in this general staging model. Janis and Mann do not intend to imply that choices can normally be exactly phrased in these terms. They assume that stages can be greatly attenuated, perfunctory and sometimes almost entirely omitted; that the specific stages cannot always be sharply differentiated; and that the process frequently involves feedback loops and stage reversions. Nevertheless, Janis and Mann postulate that the conceptualisation of the sequence provides a useful framework for analysing choice and understanding behaviour. Consequently, it can also contribute to attempts to effectively influence the processes leading to behaviour, for instance adverse behaviour in the field of health (cf. Janis and Mann 1977, p. 181, De Jong and Fawcett 1981, p. 44). Moreover, the staging model of choice comprises a normative component in the sense that in order to arrive at stable and competent decisions, successful progression through the various stages is considered a requirement. Although the notion of multiple stages in the process of decision making is
commonly accepted, its conceptualisation remains suggestive and its application in choice theory as well as focused research for the exploration and definition of distinct stages is scant.

4.3.5. The concept of control in human behaviour

*Locus of control and self-efficacy*

The common characteristics of the standard notion of choice as elaborated in the above sections on decision making styles, motivation and problem space) are differently interpreted and further refined in the various disciplinary traditions involved with choice and behavioural theory. A different and more recent contribution to choice theory is the incorporation of the concept of control. Psychologists argue that this mechanism has a significant effect on people’s decisions and operates at least partly independently of the motivation for a certain decision. An important consequence of the incorporation of control into a choice perspective is that it can alleviate the voluntaristic feature implied by a decision making approach to behaviour.

A much expressed criticism of choice theory is that it relies on a model of man represented as a free agent, following the desires of the moment. The explicit or implicit centrality of the motivation in the concept of choice highlights what a person wants to do, rather than what he or she can do, decides to do and, eventually does. Restrictions to behaviour usually appear in choice theories as external factors which have no bearing on the process of decision making, but only on the behavioural outcomes. Such factors often severely narrow choice approaches’ applicability for understanding and explaining behaviour. Ajzen and Fishbein themselves recommended their model one of the most widely applied in behavioural science especially for situations where individuals have strong control over the factors associated with the decision. In this line, Simmons concluded from an international comparison of migration intentions that Fishbein and Ajzen’s theory of reasoned action was only appropriate in a limited set of cases (A.B. Simmons 1986, p. 138). This limitation was the main argument for Ajzen’s further extension of the Fishbein-Ajzen model of behaviour (Ajzen 1991).

Parallel to and independently of the development of various decision making theories, several psychologists embarked on the role of perceived control in human behaviour. Rotter is often cited as one of the first main theorists in this field. He suggested the distinction between internal versus external locus of control as an important determinant in the choice for certain behaviour and subsequent performance (Rotter 1966). The quintessence of this idea is that the motivating effect of an outcome (‘reinforcement’ in Rotter’s terms) following some behaviour by an agent depends on the extent to which the person perceives a causal relationship between his own behaviour and the reward. 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 entirely contingent. Then the outcome is typically perceived as the result of luck, chance, fate, as under the control of powerful others, or as unpredictable because of the great complexity of the forces surrounding him. If the person perceives that an event is entirely contingent upon his own behaviour, Rotter describes the situation as characterised by ‘internal control’ (Rotter 1966, p. 1). Depending on the perception of the nature (in terms of skill or chance) of the relationship between the outcome and the preceding behaviour, people engage differently in such behaviour and display different coping capacity in uncertain choice situations. In demography, the notion of internal-external locus of control has been applied in the study of migration (Hanson and Simmons 1986).

More recently, Bandura and others developed the notion of self-efficacy which bears some conceptual similarity, but is not identical to Rotter’s behavioural control. Just as Rotter argued with regard to behavioural control, Bandura claims that self-efficacy operates as a cognitive mechanism that directly mediates motivation and performance. He underscores the importance of
“Among the mechanisms of personal agency, none is more central or pervasive than people’s beliefs about their capabilities to exercise control over their level of functioning and over events that affect their lives. People’s beliefs in their efficacy influence the choices they make, their aspirations, how much effort they mobilize in a given endeavor, how long they persevere in the face of difficulties and setbacks, whether their thought patterns are self-hindering or self-aiding, the amount of stress they experience in coping with taxing environmental demands, and their vulnerability to depression” (Bandura 1991, p. 257).

Empirical studies (e.g. R.A. Levinson 1986, Vaughan 1993, cf. Ajzen 1991, Bandura 1977a, 1982) have shown that people shun or fail activities that they believe exceed their coping capabilities, but confidently undertake and perform those they think they can manage. If self-efficacy is lacking, people tend to behave ineffectively, even if they know what to do. Perceived self-efficacy (adopted by Ajzen under the name ‘perceived control’) is concerned with judgements of how well one can successfully execute a behaviour required to produce certain outcomes. In this sense it is distinct from Rotter’s concept of control which is more defined in terms of a person’s estimate that a given behaviour will lead to certain outcomes (Bandura 1977a, p. 193, cf. Heckhausen 1986). Conceptually one might think of the difference in the sense of situating the impact of efficacy in the process towards performing behaviour, while the locus of control mediates the relation between such behaviour and its
eventual consequences. Although the judgements are conceptually distinct, and perhaps even unrelated, it has been difficult to operationalise them distinctly (Rodin 1990, p. 3).

With regard to the sources of self-efficacy, Bandura mentions efficacy expectations based on personal mastery experiences; those acquired by vicarious experience; expectations based on verbal persuasion; and those generated by emotional arousal. He emphasises, however, the vicarious learning and particularly the authentic experimental base which often provides the most firm basis of efficacy beliefs (Bandura 1982). The importance of vicarious learning is also supported by Abeles (1990), who states that senses of control are comprised in cultural schemes that are shared and transmitted between members of a group or society. Other studies show the dynamic feature of efficacy and control expectations, which can be perceived as result of learning processes. They suggest that over historical time as well as over the individual life course, these behavioural mechanisms reveal variations in stability and change (Gurin and Brim 1984, Lachman 1985, Rodin 1990). Lastly, efficacy expectations vary on several dimensions: they may be limited to simple situations or include very complex ones (magnitude); they can apply to very specific behavioural domains or to life in general (generality); and they may persevere to a greater or lesser extent in coping efforts (strength).

Control as determinant in fertility and decision making

In the past decade, the role of self-efficacy and locus of control have been acknowledged by a (small) number of choice theorists. They perceived such concepts (and particularly the efficacy variant) to be essential extensions of existing decision models. Bagozzi and Van Loo’s ‘purposeful behaviour theory’, for instance, fully adopts Bandura’s self-efficacy notion and incorporates self-efficacy beliefs regarding the success or failure of having performed a particular behaviour (Bagozzi and Van Loo 1991). Ajzen proposed his ‘theory of planned behaviour’ as an extension of the ‘theory of reasoned action’ developed together with Fishbein (Fishbein and Ajzen 1975, Ajzen and Fishbein 1980) explicitly because of the original model’s limitations in dealing with behaviours over which people have incomplete volitional control (Ajzen 1991, p. 181). Here, again, Bandura’s view on self-efficacy is the starting point to cover this theoretically unaddressed aspect of behaviour. Whereas the standard value-expectancy models are assumed to capture the motivational factors by addressing perceived causal links between a behavioural option and its consequences, it is clear that the intention to perform such behaviour can find expression only if the behaviour is under volitional control. In other words, a motivation to execute some behaviour can only be met if the person can decide at will to perform or not perform the behaviour. Most behaviours depend at least to some degree on such non-motivational factors as availability of opportunities and resources, like time, money, skills, knowledge or the appropriate interpretative framework, and cooperation of others (Ajzen 1991, pp. 181-182). It should be evident that fertility behaviour depends to an important extent on such non-motivational factors, given the central role of physiological processes in reproduction that are normally largely outside the scope of volitional control. Moreover, in situations where people do not have adequate requisite resources at their disposal to influence reproduction (e.g. in terms of availability and access to contraceptives, power and sexual control, knowledge), reproductive performance will depend both on motivation and ability or behavioural control. In a broader cognitive perspective, the availability of appropriate interpretative (causal) frameworks related to people’s locus of control could also be reckoned as part of a person’s ability to adequately perform some behaviour, since this determines whether information received by a person can be coherently and effectively integrated in mental representation, or whether it is more likely to represent confusing noise and lead to uncertainty (Antonovsky 1980).

The importance of actual behavioural control is self-evident: “one cannot marry an Eskimo if there are none around” (Blau 1987, p. 79). Such behavioural control not only depends on an individual’s
personal resources, but also on the objective opportunities provided by the environment. However, as Ajzen asserts, of greater interest than actual control, is the subjective perception of behavioural control (Ajzen 1991, p. 183). In fact, this cognitive mechanism is an internalised representation of restrictions and opportunities that are usually conceptualised as external to the process of decision making. Incorporation of perceived control in a choice perspective thus allows a better integration of many, if not most, restrictions and opportunities with which a person is faced. Of course, perceived and actual control are not always identical: if people have little information about certain behaviour or external restrictions have changed, their perception of control may be unrealistic and add little to the explanation of behaviour. However, to the extent that perceived control is an accurate measure of actual control, it can be substituted and can augment the power of a choice model; to the extent that perceived control is smaller than actual control, it can still contribute to the explanation of why people fail to fully exploit their behavioural potential and to choose the optimal alternative given a choice set; only when people overestimate their abilities, do explanation and understanding have to rely on factors restricting the effectuation of decisions, rather than those influencing the decision process.

The notions of efficacy and control play an important role in the psychological literature on behaviour under uncertainty and risk. Studies by Vlek and Stallen, for instance, suggest that the acceptability of risk depends on, among other factors, the voluntariness of exposure to risk and the personal controllability of consequences (Vlek and Stallen 1980, see also e.g. Wandersman and Hallman 1993). Such considerations about perceived control and risk exposure are immediately relevant to studies of health-related behaviour. In a study on workers’ response to pesticide exposure, Vaughan found that those who believed that they had significant control over the health effects of the exposure were more than five times as likely to engage in self-protective behaviour as those who perceived that they had no control over the consequences of this environmental risk. Neither the level of a worker’s education nor the reported amount of information received about pesticides affected this relationship. Control beliefs were more predictive of self-protective behaviour than perceptions of the effectiveness of methods, fear of pesticide risk, or beliefs about the amount of exposure (Vaughan 1993). The policy implications of this research suggest that efforts to reduce personal risk from pesticides may call for strategies that not only increase the dissemination of risk information, but also specifically target the people who believe that they have little influence over whether they experience pesticide-related (reproduction-related) illnesses (ibid., cf. Worth 1989). Notions of internal control and efficacy have also been applied to demographic behaviour. Levinson, for instance, used the concept of self-efficacy to explain teenage girls’ contraceptive behaviour (R.A. Levinson 1986). Worth, more implicitly, touched upon the control concept in relation to women’s power in sexual decision making in communities with high AIDS prevalence (Worth 1989). Bogue (1983) ranked control and efficacy among the major psychic mechanisms of behaviour formation in the sphere of fertility and family planning in developing countries. He cites several studies which associate the perceived control concept to the probability and effectiveness of contraceptive use, to the continuum between personal responsibility and fatalism, and to behavioural change (ibid., p. 170). In this line, Van de Walle describes several case studies from a survey in Mali in which motivation for certain family size or child spacing appeared to be irrelevant. The interviewed women perceived their reproductive career not as directly contiguous on their own performance, but as determined by the unfathomable and un governable ‘will of God’ (E. Van de Walle 1992, cf. Jeffery et al., 1988b, p. 177). The finding that information about the availability of contraceptive methods alone is unlikely to lead to attempts to stop childbearing which still puzzles many involved in family planning programmes (Pollack and Watkins 1993, p. 473)) appears in a very different light if interpreted in a choice perspective which encompasses efficacy and control mechanisms. As Vaughan’s (1993) study suggests, dissemination of
information about options and consequences alone does not necessarily lead to programmes that allow people to adjust their behaviour effectively. Van Luijn’s (1996) study on fertility decision making among Dutch women with an ambivalent desire for children indicates that the relevance of the concept of behavioural control is not limited to people under ‘Third world’ or ‘deprived’ conditions. Her first suggestion towards deepening the conceptualisation of fertility decision making is the application of Bandura’s self-efficacy concept to attend the coping mechanisms of choice under uncertainty (Van Luijn 1996, p. 183).

The inclusion of the consideration of perceived control in a choice perspective serves the twofold purpose of adding the important source of non-motivational explanation and understanding of behaviour, and of absorbing much of the reservation attached to the application of decision making to behaviour under circumstances of dependency, ignorance and uncertainty. With regard to fertility behaviour, especially under the circumstances of limited opportunities and resources prevailing in developing countries, the concept of control is a vital addition if a choice approach purports to give a realistic account of behaviour formation.
4.4. Abstracting choice

The concept of choice serves as a medium to address encompassively the mechanisms of behaviour formation. In order to fulfil this function, the notion of choice is elaborated beyond the conceptualisation prevailing in standard decision making theories. Three major (interrelated) theoretical strategies have been followed in this respect. One is the situation of choice and its different components in a broader cognitive interpretative frame, as introduced in Section 4.2. The second concerns the elaboration of the choice concept as relying on a broad conceptualisation of rationality, which was addressed in Chapter 2. The third pertains to the link between decision making and the social environment. Furthermore, the elaboration included elements to adjust the general choice perspective to fertility decision making.

The elaboration of the decision making approach to behaviour added the element of (perceived) control to the common choice components of options and consequences, evaluation and decision rules. The interpretation and extension of these components can be headed under the terms of problem space (Section 4.3.2), motivation structure (Section 4.3.3), style of decision making (Section 4.3.4) and perceived control (Section 4.3.5). These four elements are considered to represent the crucial considerations that operate during a person’s process of decision making (Figure 4.4). Given the causal (but not necessarily perceived) directive of the set of intermediate fertility determinants, these determinants can be conceived as a substantiation of instrumental behaviour for reproductive outcomes. Therefore, personal considerations can be conceptualised as pertaining to these proximate determinants in addition to fertility behaviour itself.

The acknowledgement that individual behaviour itself is the outcome of underlying processes, pushes understanding back to a lower level of analysis. Therefore, Figure 4.4 distinguishes the individual level concerning behavioural outcomes and the intra-individual level concerning the cognitive and biological processes and aspects involved in reproductive behaviour.

The elaboration of the four types of personal considerations related also to the identification of the mechanisms involved in their emergence. In this respect the elaborations relied importantly on learning theoretical elements. With regard to the sources of information, connections are established with people’s personal background through learning from personal experience and emotional arousal. The impact of the social environment is conceptualised in terms of verbalisation by others and particularly observational or vicarious learning. With regard to the constituent processes of learning and decision making, mechanisms of retention, attention and motivation were identified and elaborated in Sections 4.2.3 (Cognitive schemes), 4.3.2 (Processes of attention and perception) and 4.3.3 (Sources and mechanisms of motivation). The major key to understanding individual choice is situated in the task of disclosing these personal considerations about motivation, options, control and decision styles, and their underlying mechanisms. Among the implications for research following from the conceptualisation of choice presented here, is one excellently phrased by Simon:
“All these investigations call for empirical inquiry at the microlevel - detailed studies of decision makers engaged in the task of choice. They are not questions that are easily answered by even the most sophisticated [...] analysis of aggregate data. To understand the processes [...] calls for observing these processes directly while they are going on [...] and/or interrogating the decision maker about beliefs, expectations, and methods of calculation and reasoning” (H.A. Simon 1987, p. 27).