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Three Contributions to the International Encyclopedia of the Social Sciences

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Quetelet, Lambert-Adolphe-Jacques (1796-1874)

R. Lesthaeghe

Interface Demography

In: International Encyclopedia of the Social and Behavioral Sciences

1. Life and career

Born in Ghent (Belgium) to a French father and Flemish mother. The young Quetelet started his career as a teacher, and besides his interest in mathematics, he also had artistic talents. Quetelet was the first student to obtain a doctorate in 1819 at the newly founded State University of Ghent. In his dissertation he presented a new geometric function called the focal curve. In 1819 he was appointed mathematics professor at the Atheneum in Brussels and in 1820 he was elected to the *Académie royale des sciences et des belles-lettres*. The academy became the central place from which Quetelet directed all his other activities. In 1823 his scientific orientation took a decisive turn: he proposed the foundation of a new observatory to the Dutch governement, and in the same year he was sent to Paris for further preparation of this plan. At the Paris observatory contacts were established with Laplace, Poisson and Fourier, and Quetelet's interests in probability theory and astronomy stem from this short period in France. The construction of the Brussels observatory was completed only in 1832, but in the meantime Quetelet had also become involved in the planning of the 1830 population census. Unfortunately this census was never completed as a result of the Belgium's secession from the Netherlands in 1830. But, elected as secretary for life at the Academy in 1834, Quetelet remained in control not only of the activities in meteorology, astronomy and physical geography located at the observatory, but also of the activities in demography and statistics at the *Bureau de Statistique* and, from 1841 on, at the *Commission centrale de Statistique*. The procedures to be used in the new census were tried out first in Brussels in 1842, and the nationwide census took place in October 1846. Both the method of census taking and the subsequent analyses with detailed breakdowns by age and marital status set new standards for similar undertakings in most other European countries. In the meantime Quetelet had gained an international reputation, first by the publication of his *Physique sociale* in 1835, in which he brought together his earlier statistical work on demographic subjects, anthropometry and criminology, and then by his relentless efforts to establish statistics as a new internationally oriented and empirically grounded scientific discipline. The latter was accomplished mainly through organising a steady succession of international statistics conferences and by inspiring the foundation of statistical societies in other countries. In 1855, however, Quetelet suffered a major stroke, and from then on his own scientific contribution was seriously reduced. But, until his death in 1874, he continued to inspire statistical applications in a wide variety of fields, and above all, to promote international comparability of statistical information. In Desrosières' words (1993: 95), "Quetelet was the orchestra conductor of 19th Century statistics".

2. Quetelet's contribution to statistics and demography

Quetelet's statistical work was profoundly influenced by early probability theory - particularly the binomial distribution of events with equal odds - and by the use that Laplace had made of the Gaussian bell curve in astronomy. From Laplace he had gained the insight that the binomial distribution could also represent measurement error in astronomical observations, and Quetelet was convinced that this would also hold for measurements in the physical, social and "moral" domains. In the 1820s, measurements and frequency distributions pertaining to these domains and based on large numbers were still very rare. Quetelet had to use the frequency distribution of the chest circumferences of over 5000 Scottish recruits to verify his hypothesis that these would conform to the binomial distribution (Hacking 1999: 108-111). In a series of heights of French recruits, however, he detected a deviation from the expected distribution and therefore suspected the presence of systematic errors associated with attempts to avoid conscription. This illustrates how Quetelet used theoretical distributions to assess measurement reliability.

His use of the bell curve led him also into far deeper water: he proposed the notion of *l'homme moyen* or the average man, of which all members of a given population would be imperfect copies. For Quetelet, and for many after him, the emergence of a bell curve is a strong indication that there must be a link between the individuals producing this particular frequency distribution. Individuals would be drawn as balls from the same urn, and populations would correspond to different urns. The average men, each reconstructed from a different population, would therefore facilitate comparisons between populations, which themselves would be sufficiently homogeneous. Quetelet's "average man" has often been misunderstood and misused. Firstly, Quetelet was never preoccupied exclusively by averages. Whenever possible he presented complete distributions, and one of his contributions to demography is precisely his systematic presentation of *age-specific distributions* of vital events or of other occurences (e.g. crime). This is the beginning of the statistical study of the life cycle. Secondly, Quetelet would be quite shocked to see his average man being associated with national prejudice, e.g. the stingy Scot, the thrifty Frenchman;..., for the simple reason that these would all be *unmeasured* attributes. In fact, he perceived his average man as an antidote against statements based on prejudice, anecdote and impression. It is for this reason that Quetelet can be considered as one of the founding fathers of modern empirical sociology: adequate statistical measurement presupposes operationalization with satisfactory reliability and validity.

The most fundamental critique of the average man came from A. Lexis who discovered that the variances of observed distributions are generally too large to uphold the thesis of balls drawn from the same urn. The hypothesis of a homogeneous population ceased to be tenable, and this would have major consequences for the advancement of statistics and for theories in the biological and social sciences (cf. Desrosières 1993: 111ff). In present day multivariate analyses we now routinely calculate "little average men" in terms of subgroup means, odds ratios for different subpopulations at risk and for different combinations of categories of covariates. Furthermore, these numerous "little average men" are compared and the results are tested for the presence or absence of significant differences.

The use of the bell curve was taken one step further by Quetelet's younger colleague and professor of mathematics at his alma mater in Ghent. Pierre-François Verhulst (1804-1849) imagined that the growth rate r of a population would evolve according to a normal distribution. The size of a population, or of any other stock, would then follow a logistic curve, i.e. the elongated S-curve, with 50% of the total growth corresponding to the maximum of r, and then leveling off toward a saturation plateau. The logistic curve proved to have many applications: later demographic transitions produced population evolutions that very closely resemble the logistic curve, and diffusion processes modeled along the principle of contagion (of rumors, knowledge, disease, technology...) or of competition commonly lead to growth curves in accordance with Verhulst's logistic.

It is rather ironic that Verhulst's view of this particular form of population change did not feed back into Quetelet's own demographic work. Quetelet continued to think within the framework of a stationary population. Like several observers before him (e.g. Vauban, Süssmilch) Quetelet had been impressed by the observation that both numbers and distributions of vital events (deaths, births, marriages, ages at marriage and age differences between spouses) showed a remarkable stability over time. His early work with Smits on the demography of the low countries had convinced him even more. Only major disturbances, such as a revolution, were capable of producing a temporary distortion (cf. his *causes constantes* et *causes accidentelles* in the *Physique sociale*). Quetelet kept thinking in terms of a homeostatic model, in the same way as Malthus had before him.

In his construction of the Belgian life table of 1841-50, centered around the census of 1846 and in his "population tables" (population by age, sex and marital status simultaneously) of 1850, Quetelet explicitly discusses the properties of a stationary population and shows that the actual age composition ought to be the same as the l_x or ${}_nL_x$ functions of the life table (l_x = number of survivors at each exact age x; ${}_nL_x$ = number of person-years lived in the age interval x to x+n). Furthermore, Quetelet goes on to show that the hypothesis of constant mortality could be relaxed (1835: 310; 1850: 16): "the necessary condition for deducing a population table (i.e. an age structure) from a life table is that the deaths by age annually preserve the same ratios [in French: *rapports*] between them". (present author's translation and clarifications). Quetelet was clearly on the way to show that there exists a neutral mortality decline which does not affect the shape of the age distribution (for the proof see A.J. Coale 1972: 33-36). What Quetelet never developed -- probably because there was not yet a need for it in pre-transition Belgium -- was the model of a stable population with a growth rate different from zero. Yet, his demographic work shows that he can be considered as an early founding father of the branch of contemporary demography called "indirect estimation". In this branch extensive use is made of population models (stationary, stable, quasi-stable), of model life tables and of the mathematical properties of particular model distributions for detecting and correcting errors in recorded data, and especially for estimating basic demographic parameters of mortality, fertility and nuptiality on the basis of fragmentary information. Modern historical demography and the demography of developing countries progressed rapidly thanks to these techniques and ways of thinking.

3. Quetelet's contribution to sociology

In contrast to Auguste Comte, Quetelet never developed a general plan for a new social science, and by 1900 many of his ideas had already become outdated (cf. J. Lottin, 1912: 391-515). He is, however, highly typical of the beginnings of sociology: there is this new entity, called "society", that can be studied and analyzed from the outside with objective methods. This entity follows its own "laws" (i.e. patterning, regularities) and these can be detected via statistical methods. At first, Quetelet's sociology had a deterministic ring, and his distinction between *causes constantes* and *causes accidentelles* led straight into the debate pitting collective determinism against individual freedom of action. Quetelet is clearly more impressed by the *causes constantes*, but in various places in his work he also proposed a solution to the conundrum. In an early letter to Villermé of 1832, for instance, Quetelet writes the following: "As a member of society [in French: *corps social*], the individual experiences at each moment the social requirements [*la nécessité des causes*] and pays them regular tribute; but as an individual he masters these influences [*causes*] to some extent, modifies their effect and can seek to reach a superior state". (quoted in Desrosières: 103-104; present author's translation). In other words, through socialization the actor becomes an integral part of society, but individual and institutional agency (for Quetelet: the advancement of the sciences) play decisive roles in social change.

For many of his contemporaries the deterministic ring of the *Physique sociale* of 1835 continued to be a source of steady criticism, particularly when Quetelet went on with his assertion that the *causes accidentelles* merely compensate each other. Later on, however, Emile Durkheim viewed the social influence on individuals and the feedback stemming from individual and collective action in very much the same way as Quetelet. Durkheim's equally holistic view of society, as in his *Formes élémentaires de la vie religieuse*, was directly influenced by Quetelet's work.

In actual practice, however, Quetelet remains essentially a master of "comparative statics" rather than of "social dynamics". He paid little attention to the effects of early industrialization (definitely a *cause constante*) or to the impact of the economic, social and health crises of the 1840s. This is very surprising for a chief statistician and demographer. The social reform movements, the rise in real wages and the decline in adult mortality in Belgium since the 1860s also remain without comment. His successors in sociology were much more alert to analyzing the dynamics of the major societal transformations they were witnessing.

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Family formation theory: the complementarity of economic and social explanations

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1. The problem

With the growing specialization in the social sciences the various disciplines have often developed their own traditions and paradigms in explaining social phenomena. There is, however, a risk that this may lead to segregated "communities of belief" that advance only "positive proof" in support of their own positions. This has, on occasion, led to the presentation of methodologically flawed research that is supposed to enhance the supremacy of one discipline over the other (see T.K. Burch, 1996).

As far as family and population research is concerned, contributions are regularly made from a wide variety of disciplinary backgrounds. The phenomena that needed to be explained, such as the fertility or mortality transitions or the change in demographic behaviour and household structures, have drawn the attention of sociologists, historians, economists, anthropologists, geographers, biologists, epidemiologists and statisticians alike. As a consequence, the field of population studies - or demography in a broad sense - has always had firm interdisciplinary roots. The leading journals, such as *Population Studies* (UK), *Demography* (US), *Population and Development Review* (US), and *Population* (France) have remained loyal to their interdisciplinary tradition, and they are still firmly in the lead over their more "mono-disciplinary" competitors.

Yet, there have been skirmishes and frustrations. The former have often been similar to the nature-nurture debate in psychology. But in the field of family and population research, they emerge in the form of an *economics versus culture* debate. The *demand theory* used by economists in explaining declining fertility or differential fertility between social groups is matched by a *diffusion theory*, advanced by economists and non-economists alike. In the latter, the roles of social learning and the worldwide spreading of new ideas and attitudes are being accentuated. Today, there is still a small cluster of neo-classic economists that hold the belief that nothing more is needed on the explanatory side than changing constraints and opportunity structures (cf. G.S. Becker, 1991; Becker G.S. and J. Stigler, 1977), but at the other extreme, there is also a hard core of diffusionists who claim that historical and contemporary fertility transitions are occurring under such highly contrasting economic conditions that only the cultural diffusion of new ideas - now also followed by family planning programmes - can account for them (e.g. J. Cleland and C. Wilson, 1987). Obviously such discussions have major policy implications, and the debate has had a lasting life (see the contrasting results on the effects of family planning in T.P. Schultz, 1997, and in J. Bongaarts et al., 1990).

In contrast, the frustrations among the mainstream participants in family and population studies stem from the observation that the different explanations live side by side as distinct narratives, as separate "good stories". D. van de Kaa (1996) describes an *anchored narrative* by the following two characteristics: (a) there must be an easily identifiable central action (such as a detailed statistical account of changing trends or of newly emerging differentials) and (b) there must be a setting or theory that allows for an easy interpretation of that action. A well-anchored narrative consists of sub-narratives that can be ordered from the general to the highly detailed. The question is whether the various social science disciplines can achieve a sufficiently high degree of sophistication that lifts them beyond anchored, but still compartmentalized narratives.

A classic recipe for theory integration emerged from the great debate in philosophy of science on the evolution of scientific knowledge as it took place in the late 1960s and much of the 1970s with Karl Popper and Thomas Kuhn as major protagonists (see I. Lakatos and A. Musgrave, 1970). The gist of Lakatos 's strategy of *progressive problem shift* (1970) is that a scientific theory H_1 can be regarded as falsified only if another theory H_2 has been proposed such that:

1. The counter-evidence to H_1 is corroborating evidence for H_2
2. H_2 satisfactorily explains all the empirical successes hitherto explained by H_1 (i.e. partial inclusion of H_1 into H_2).
3. H_2 is also capable of explaining or predicting new facts or facts that were unlikely or impossible according to H_1 (i.e. enlarged content of H_2).

If these three principles are applied to the theories and anchored narratives in the broader field of demography, one comes to the following observations (cf. R. Lesthaeghe, 1998):
1. Many theories, or substantial parts of them, are not mutually exclusive but merely complementary: H_1 and H_2 explain different aspects or account for different sub-narratives.
2. Mechanisms described in H_1 are often connected to mechanisms identified by H_2. Theories escape from these connections through *ceteris paribus* clauses with respect to different but nonetheless highly relevant omitted variables. If put together, however, the respective mechanisms in H_1 and H_2 often produce mutually reinforcing (or neutralizing) consequences or lead to important interaction effects.
3. Non-overlapping parts of H_1 and H_2 that produce opposite predictions have rarely been falsified. Rather, their respective predictions have often come true in *different contexts*. Hence, a substantial degree of historical path dependency or context specificity emerges. This points in the direction of conditionality on factors not specified in either H_1 or H_2 but to be identified in a broader theory H_3.

These points will now be illustrated with respect to the changes in family formation and dissolution in industrialized countries since the 1950s.

2. A comparison of three theories of the "second demographic transition"

The term "second demographic transition" was introduced by Lesthaeghe and van de Kaa (1986) to describe the changes in family formation, union dissolution and patterns of family reconstruction in Western nations during the latter part of the 20th Century. By now, these patterns are also emerging in the former East bloc countries of Europe including Russia. The changes in family formation operate through the postponement of marriage, a rise in single living, prolonged residence in the parental household, increases in incidence and duration of cohabitation (both pre- and post-marital), a postponement of parenthood leading to overall subreplacement fertility, and an increase in procreation within consensual unions. Patterns of union dissolution are characterized by rising divorce rates occuring at shorter durations of marriage and by high separation rates among cohabitants. These phenomena lead to more single person households and to more female-headed single parent households. More children grow up in non-conventional families. Although countries differ with respect to incidence and timing (e.g. R. Lesthaeghe, 1995), most changes have consistent international trends.

These features of the narrative have been explained in three ways:
1. by the *theory of increased female economic autonomy* combined with other ingredients of the neo-classic demand theory in economics (G.S. Becker et al., 1977; G.S. Becker, 1991; V. Hotz et al., 1997; T.C. Bergstrom, 1997);
2. by the *theory of relative economic deprivation* (R. Easterlin, 1976; R. Easterlin, C. Macdonald and D.J. Macunovich, 1991);
3. by the *theory of ideational shift* (S. Preston, 1986; R. Lesthaeghe and D. Meekers, 1986; A. Thornton and D. Camburn, 1987; R. Lesthaeghe and J. Surkyn, 1988; L. Bumpass, 1990).

The neo-classic economic theory of the family posits that (a) increasing investment in the quality (e.g. education) of children rather than in their numbers is being made as individuals and societies become wealthier, and (b) that increased female education and the opening up of employment opportunities for women has led to increased female *economic* autonomy and to increased opportunity costs associated with household tasks and child rearing. Services provided by the market are substituted for such tasks. Economic autonomy also means that women are less dependent on husbands, so that entry costs into marriage have become higher and exit costs lower. From these core propositions one can easily derive the changing position of men in households (sharing of tasks and child rearing activities, the quest for gender symmetry, weakening of male authority etc.). By the same token, the rules of the game are being altered, especially with respect to intra-familial exchange: less trust from family members in the family head is exchanged for less altruism from the family head toward the members. All of this leads to an economic disinstitutionalization of the family, and the narrative of the "second demographic transition" describes the demographic outcomes produced by these forces.

The theory of relative economic deprivation provides a number of other key ingredients. The outcomes of this narrative are essentially produced by the tension between the consumption aspirations and employment opportunities of successive male generations. R. Easterlin originally used the theory to account for the baby boom of the 1960s and the baby bust of the 1970s and thereafter. The generations that produced the marriage and baby boom were raised in periods of less economic growth and had not developed high consumption aspirations during their childhood. These cohorts, however, benefitted from expanding economic opportunities during the 1960s, and as a result they could more easily satisfy both consumption aspirations and family formation desires. Subsequent cohorts experienced high levels of consumption in their families of origin and developed high consumption aspirations themselves, but could not as easily fullfil these as a result of less advantageous labour market conditions. All the crucial steps in family formation were therefore postponed and new arrangements with a more temporary character, such as prolonged residence in the parental household or cohabitation, emerged as a necessity while waiting for better times. Furthermore, high consumption aspirations in tandem with scarcer opportunities for males fostered the need for an additional partial or full income to be provided by the female partner. From there onwards, the story could easily be completed according to the lines provided by the "female economic autonomy" version of the neo-classic school.

Yet, both the starting point and the mechanism of the narratives are different. Becker et al. start from the female side, whereas Easterlin et al. start from the male point of view. Moreover, the Easterlin version has the built-in mechanism of cohort succession and a link to values (concerning consumption) fostered during childhood and adolescence. In the original version, a demographic factor was also given greater prominence: cohort size would acerbate the consumption aspirations-income tension since larger cohorts would face more competition and hence also tougher employment conditions. Higher female education and a larger female labour force supply (see the neo-classic version) would of course result in similar effects.

From the above narratives it is clear that the two economic theories H_1 and H_2 are not mutually exclusive and that their respective mechanisms have, to put it metaphorically, several cog wheels that grip into each others.

The theory of ideational shifts links the features of the second demographic transition to *long term* trends, often starting in the 19th century, toward greater individual autonomy in the ethical, religious and political domains. Typical expressions of this trend are the steady rise of secularism in the West over the last two centuries, the growth of emancipation movements operating first in the domain of social stratification and then in the area of gender relations, the steady rise of *post-materialist* political aspirations (cf. R. Inglehart, 1990) in each successive birth cohort since 1920, the historical alteration of priorities in child socialization values (cf. D. Alwin, 1990); or more recently the growth of scepticism toward institutions and the weakening of civil morality. In this respect, the baby boom in the original six member countries of the EU corresponded with the arrival at childbearing age of a cohort of parents that had hardly progressed on the post-materialism scale with respect to political aspirations, whereas the baby bust corresponds with the childbearing of the cohort that made the largest leap of all on the same scale (R. Lesthaeghe and J. Surkyn, 1988). Very much the same result emerges with respect to the relative pace of secularization in Europe, and also among American youths, a significant shift away from community orientations and toward a self-centered preoccupation with material riches was observed (R. Easterlin and E. Crimmins, 1991). On the whole, the rise of secular individualism and the concommittantly diminishing acceptability of institutional regulation in the sphere of the family are part of the same trend. This also implies that individuals are allowed more freedom to opt out of any arrangement if returns are judged to be inadequate and hence, that the cost-benefit calculus, which features so prominently in the neo-classic economic version, has gained *legitimacy* in most spheres of life.

A distinct feature of the ideational shifts theory is its preoccupation with intergenerational values transmission, the predictive power of value orientations on subsequent choices with respect to patterns of family formation and dissolution (selection effects), and the feed-back effects in the form of value adjustments (affirmation or negation) in function of certain life cycle events. This line of research has made extensive use of panel data in assessing the strength of these effects net of other predictors commonly used in micro-economic empirical analyses (see A. Thornton and D. Camburn, 1987; W. Axinn and A. Thornton, 1993; M. Clarkberg et al., 1995; J.S. Barber, 1999; G. Moors, 1999). These meticulously designed studies all show that value orientations, even when measured at young ages (including those related to consumption aspirations and labour force commitment), have highly significant independent effects on future life course choices such as cohabitation versus marriage, parenthood within and outside wedlock, timing and quantum of fertility, separation and divorce. While not refuting predictions derived from economic theory, these studies document the extra predictive power of ideational dimensions.

Finally, it is clear that several ingredients of the ideational theory can be linked directly to those featured by the economic views. For instance, the neo-classic central focus on female economic autonomy leads directly to the changes in gender relations, and these indeed matter in the unfolding of alternative forms of family formation. In addition, both the Easterlin version and the ideational theory pay ample attention to the role of socialization in successive generations and both are essentially cohort theories of social change. Ideational theory, however, traces the trends in causal factors much further back in time, and it does not of course restrict itself to consumption aspirations alone. But in doing so, the ideational shifts theory provides support for the neo-classic economic position by showing how increased legitimacy of individual economic rationality is taking the lead over the forces of institutional normative regulation.

3. Predictions and contexts: the example of cohabitation

The three theories just discussed offer different mechanisms for explaining the rise of premarital cohabitation in the West since the 1960s. According to the neo-classic theory, the phenomenon results from increased economic independence of women, and expects, therefore, that better educated women with better employment opportunities and higher incomes take the lead. In the relative economic deprivation version, cohabitation is a preliminary stage typically emerging prior to the full establishment of economic selfsufficiency of a new household. Cohabitation is, therefore, more typical for lower income groups with less employment stability, or for subgroups that have not yet matched their incomes to their consumption aspirations. In the ideational version, cohabitation is not so much predicted on the basis of economic constraints or opportunities, but it stems from a set of value orientations already emerging during the "formative years". As these values are often linked to more advanced education, a positive correlation between education and cohabitation is expected. Furthermore, antecedents in the family of origin (such as parental divorce) also contribute to earlier home leaving and cohabitation (e.g. Cherlin et al., 1995; K. Kiernan and J. Hobcraft, 1997), *inter alia,* via the accentuation of values of ethical autonomy.

The neo-classic economic theory and the ideational theory both draw support from the initial positive correlation between education and cohabitation in a number of countries. At the micro-level, attitudes associated with career commitment and gender symmetry, also tend to be positively related to premarital cohabitation. However, in several contexts (e.g. Scandinavia, Austria), historical patterns of premarital cohabitation had survived in specific subgroups, and the diffusion of premarital cohabitation did not originate from the college educated or in large urban areas, but rather in the working class and more remote areas (e.g. northern Sweden, Alpine valleys). In addition, in most other Western countries, younger generations from working class backgrounds and with less education adopted the pattern of cohabitation very quickly, so that the initial positive correlation with education vanished or even reversed. The predictive power of specific value orientations is also weakening as cohabitation has ceased to be an expression of protest among the highly unconventional (for these trends see: C. Villeneuve-Gokalp; V.K. Oppenheim and V. Lew, 1995; P.-M. Boulanger et al., 1997; M. Bracher and G. Santow, 1998; O. Kravdal, 1999).

To sum up, cohabitation has become widespread among very different socio-economic strata, suggesting (1) the existence of particular diffusion patterns in various national contexts, and (2) a rapid differentiation of motivations behind the choice. This form of family formation can be initiated for reasons suggested by all three theories. As a result, a particular theory may have higher or lower predictive power depending on the phase of the process of diffusion and on national or historical contexts.

4. Conclusion

The scientific traditions in the different social science disciplines leave an important imprint on both the theoretical conceptualization and the research agenda. Neo-classical economists have a strongly deductive approach and typically start with theory construction and the specification of the corresponding equations. Often they stop short of adequate operationalizations of basic concepts or fail to incorporate non-economic variables in tandem with economic proxies (W.C. Robinson, 1997). Demographers, sociologists and statisticians use both deductive and inductive strategies, and they are continuously engaged in concept operationalizations and statistical testing or exploration. The latter group is, therefore, more likely to report "mixed results" than the former. Empirical scrutinity of associations derived from theory invariably points in the direction of theoretical incompleteness. As shown by the example above, the separate narratives are seldom mutually exclusive, they complement each other in more than one way, and they produce predictions that are restricted to context, time or social group. All three theories are therefore candidates for inclusion into a larger theoretical framework.

Finally, there are two particularly fruitful ways of advancing empirical research. Firstly, the use of panel data, with measurements of both socio-economic and attitudinal variables at each wave, is ideally suited to check predictions deduced from various theories.

And secondly, much can be learned from comparisons across contexts if attempts are made to specify and to test the presumed contextual causes at work.

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Family Theory.
The Role of Changing Values.

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Interface Demography

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Abstract:

In family formation research one often questions whether ideational factors relate to demographic processes. Also, the specification of the influence of values is an issue still subject to debate. This paper focuses on three issues.

Firstly, it is argued that the status of values within family theory largely depends on the attitude of different scholars toward the concept of values, i.e. values may be denied, trivialized or emphasized.

Secondly, values constitute only one but a significant factor in explaining changes in the family. If such a limited scope is accepted, then the significance of any values theory can be judged on

a) its ability to complement other types of explanations without becoming spurious in itself;
b) its intrinsic quality to explain empirical findings including historical changes and geographical variations, as well as individual differences and fluctuations; and
c) its empirical merits.

Thirdly, the paper merges the significance of two types of values theories:

a) socialization theory that focuses on generational patterns in values socialization, and
b) role theory that claims that values are firmly embedded in the socio-economic situation people actually live in.

Taken together these two perspectives highlight the dynamics of the values-behavior relationship.

1. Introducing the Issue.

This paper is about the significance of changing values in understanding demographic behavior. Questioning the significance of values may seem odd since in every day life probably few people would doubt that values are important. Among social scientists, however, the issue of values still evokes feelings of ambivalence and controversy. Three issues that we think are pertinent to a sociological understanding of the significance of values in family research will be broached. Firstly, the significance of values as such is dealt with, including the discussion about the concept of values. Secondly, we argue that if values theory [1] is to play a role in family research, it should be able to complement other types of explanations as well as to have an intrinsic quality to explain demographic changes both at the individual and the society level. Finally, two types of values theories, i.e. socialization and role theory are merged into one framework that highlights the dynamics of the values-behavior relationship.

2. On the Significance of Values.

In general three types of attitudes toward the concept of values can be observed among social scientists: denial, trivialization and emphasis.

Probably the most radical type of denying the *significance* of values is to deny *values* altogether. In most economic theories for instance, *value* (without the 's) enters the picture as a synonym of 'price'. *Values* as a cultural factor are rarely considered. This is especially true for neo-classic economists (cf. G. Becker, 1981). If ideational factors are allowed in economic models, it is often in terms of tastes, preferences or needs, and not in terms of values in a sociological sense of the word (cf. infra). But even in sociology some approaches (e.g. structural theories) are notorious for denying the significance of culture (Thompson, Ellis and Wildavsky, 1990). Of those approaches that explicitly give credit to the cultural argument, several also raise doubt whether the concept of values is of need when studying culture and social change (Adler, 1956; Davis, 1966; Blake and Davis, 1968; Hutcheon, 1972; and Laudon, 1986 - see also J.F. Scott's phenomenological approach (Cancian, 1975), or Homans' social exchange theory (Emerson, 1976)). They

[1] Although logically one should write about 'value theory' (without the -s) we prefer the plural form 'values' because 'value' and 'values' are distinct concepts similar to 'medium' and 'media'. In writing about 'values'

question the usefulness of the concept of values in causal explanations because values can only be inferred from behavior itself or from specific norms and goals. Hence, in their views a direct explanation of human behavior by referring to values is a sociological tautology. Although these critics defer in opinion regarding the type of cultural factors that are significant, they all deny the significance of values.

Trivialization of values may manifest itself in several ways. Values may be trivialized by 'explaining it away', i.e. by arguing that values are merely spuriously related to behavior. Such a view is in congruency with the former critics regarding the tautological nature of any values explanation of behavior. Values may also be trivialized by making them a 'constant' or 'exogenous' factor in explaining behavior. Within rational choice theory the exogenous character of values is explicit: assuming that there is a rational actor is implying that 'rationality' is a *natural* characteristic rather than a cultural construct. Defining values as an exogenous factor or arguing that values are merely spuriously related to behavior is *minimizing* their role. However, *maximizing* their importance can also lead to trivialization. This is illustrated in the work of Parsons (1937) who - perhaps ironically enough - heavily protested against the aforementioned 'natural science' kind of attitude toward values. Parsons' own functionalist approach to values, however, is also criticized for having an intrinsic trivial nature (Spates, 1983). Part of the trivialization is due to the teleological conceptualization of values within the Parsonian tradition: "a value is a conception ... of the desirable which influence the selection from available modes, means and ends of action (C. Kluckhohn, in: Parsons and Shils, 1951, p.395). Values determine behavior *by definition*. By consequence, the question *whether* they do is irrelevant. Spates (1983) raises a second caveat, i.e. that Parsons' values theory faces the problem of deductive imposition by arguing that values can only be deduced by a careful theorist. Hence, observable reality is forced into accord with a preconceived model. Although theoretically values are emphasized, empirically they are trivialized. Dropping the element of action probably leads to a less trivial conceptualization..

The empirical tradition of studying values by definition emphasizes the significance of values. Conceptualization of values, however, does not prove to be its strongest point. Many researchers do not hesitate to use the concept of values implicitly in their work (Almond and Wilson, 1988) assuming a mutual intuitive understanding of the concept. Others have claimed that the empirical tradition merely *added* to the conceptual confusion

we refer to the totality of values as ideational factor, and not to 'value' in the sense of the worth of an object.

rather than anything else (Lautmann, 1971). Although there is a ground of truth in these claims, we feel they tend to exaggerate divergency. If we leave aside those studies focusing on values as objects and evaluate *ideational* approaches, we observe a tendency to fit in with two traditions. 'Fitting in' does not mean that scholars fully subscribe to the conceptualization within a tradition, but rather that they share a point of departure. The first we already discussed in the preceding section: the Parsonian tradition. Researchers working within this framework seem to agree with Kluckhohn's idea that values are 'conceptions of the desirable'. The second tradition has been initialized by the social psychologist Rokeach (1968, 1973). He explicitly opposes this Parsonian concept of values [2]. Instead he argues that "a *value* is an enduring belief that a specific mode of conduct or end-state of existence is personally or socially preferable to an opposite or converse mode of conduct or end-state of existence" (1973, p.5). The major advantage of this definition is that it tries to avoid that issues open to empirical questioning - such as reference to action - constitute elements of that definition. Presumably, this is one of the reasons why the two values theories that we will discuss in the last section adopt a similar concept of values. Nevertheless, one could interpret Rokeach's concept of values as being a conservative force since they are defined as *enduring* beliefs. Although socialization theories (cf. infra) tend to agree with the latter statement, Rokeach himself has pointed out that complete stability is not at issue. To avoid misinterpretation we suggest dropping the adjective 'enduring' from the nominal definition.

From the preceding sections it has become obvious that it is important to distinguish 'values' from other ideational factors. Several of such factors [3] can be listed but in family research, three seem important, i.e. norms, attitudes and intentions. Especially the latter two concepts drew much more attention than values as far as studies in demographic behavior are concerned. Unfortunately, there is little agreement on the subject. Elaborating on the discussion is, however, beyond the scope of this paper [4]. Instead, we present a formal description that should allow the reader to distinguish among the different approaches focusing on the significance of ideational factors. In our view, the major difference between values and attitudes is that attitudes are more *object* and *situation*

[2] That both traditions are competing is illustrated by the fact that several researchers have rejected Rokeach's definitions by preferring Kluckhohn's conceptualization (see: Mohler, 1987; and, Miceli and Castelfranchi, 1989).

[3] The following, non-exhaustive list illustrates the diversity : norms, ideals, beliefs, objects, behavioral probabilities, attitudes, needs, traits, interests, orientations, lifestyles, preferences, goals, standards, commitments, etc. (see: Handy, 1970; Hutcheon, 1972; Rokeach, 1973; Cancian, 1975; Fishbein & Ajzen, 1975; Becker, a.o., 1983; end Miceli & Castelfranchi, 1989)

specific than values that are of a more general nature. Intentions are even more object related. Consequently, an *'organization of attitudes'* focusing on different objects and situations, transcends the specificity of each attitude, and may be interpreted as a *'values orientation'*. The European and World Values Studies often adopt such a strategy (Harding & Phillips, 1986; Ester, Halman & de Moor, 1993) by collapsing scores on different attitudes into one or several values dimensions. Hence, attitudes and values are strongly related. Intentions, however, are more closely related to behavior. For that reason intentions are often modeled as dependent variables alternative to behavior in values research (Inglehart, 1977 & 1990). At least Fishbein and Ajzen's theory of reasoned action (1975; see also Ajzen & Fishbein, 1980) demurs at such a point of view. Instead they argue that the best predictor of behavior is the intention to do so. A second difference between values on the one hand and attitudes or intentions on the other is that the latter are individual predispositions, whereas values may *also* be characteristics of depersonalized entities, as in, for instance 'the values of the working class'. As such values bridge the gap between attitudes and norms. Norms prevail at the society or macro level as products of cultural inheritance. They refer to prescriptions of how to behave. In fact they include sets of (normative) *rules*. Internalization of these rules may define values orientations.

3. The Role of Values within Family Theory and Research.

The values argument forms part of a broader context that discusses the role of culture within social demography. As far as family research is concerned it is unfeasible to 'neglect' other non-cultural types of explanation. The impact of G. Becker's New Home Economics (1981) and R. Easterlin's Social Deprivation Theory (1976, 1980) in explaining demographic changes in the last couple decades cannot be ignored. Pollak and Watkins (1993) recently summarized the different perspectives on how cultural approaches relate to economic perspectives. They argued that cultural and economic approaches are compatible either when they are consistent or equivalent to one another or when cultural explanations attempt to specify the scope of economic rational choice explanations. As far as values are concerned Preston (1986) and Lesthaeghe & Surkyn (1988) are mentioned as especially relevant. Similarly, Lesthaeghe and Moors (1994) and Lesthaeghe (1998) have demonstrated the usefulness of a theoretical frame of reference that focuses on the

[4] The aforementioned references can serve as an introduction to this topic.

complementarity of theoretical perspectives in studying family formation. They argue that our understanding of demographic transitions may deteriorate by rigidly adopting a grand theory or by aiming at enhancing supremacy of one particular paradigm. Treating theories are distinct but not mutually exclusive, on the other hand, results in a multi-causal theoretical frame of reference that can be used to 'explain' historical and geographical variations (Preston, 1986; Lesthaeghe, 1995) as well as individual differences (Lesthaeghe and Meekers, 1986; Lesthaeghe and Moors, 1994). Irrespective of these arguments, Oppenheimer (1994) remains skeptical. In her opinion, researchers who rely exclusively on the idea that values influence behavior face an empirical problem; namely, that there is little empirical research that actually tests the presumed causal effect. However, the little evidence that exists supports the theory of ideational change. Using panel data, Moors (1997 & 1999) – on values – and Thornton & colleagues (1987 & 1992; see also Barber, 1999) – on attitudes – clearly demonstrated that ideational factors autonomously influence demographic transitions. Hence, the ability of values theory to complement other types of explanations, its intrinsic quality to explain demographic changes and its empirical merits leads us to conclude that there is a role to play for values.

4. Values Theory?

In empirical research on values two theories developed in the seventies drew much attention, i.e. Inglehart's socialization theory (1977 & 1990) and Kohn's role theory (1977 (first edition, 1969) & Kohn & Slomczynski, 1993). They produced an independent body of research, stirred controversy, but have gained prominence in the last decades. In demography Inglehart's theory has been used by the researchers focusing on values (cf. infra) because the theory is founded on the notion of ideational change. Irrespective of some modifications, the heart of Inglehart's argument has remained intact. It is founded on *two basic premises*. First, Inglehart argues that an individual's values priorities reflect his or her socio-economic environment: one attaches relatively more importance to relatively scarce objects. This *scarcity argument* is complemented by a *socialization argument* that stresses the importance of experiences in the so-called 'formative years': Inglehart assumes that - in reaching adulthood - values tend to crystallize in personality. By consequence he 'predicts' a generational pattern of change in values orientations toward increasing preference for autonomy and subsequent behavior. That the process of social metabolism, i.e. the succession of generations with distinctive profiles, may generate social change was nothing new to a demographer familiar with the work of N. Ryder (1965). By consequence, it has been a small step to link a generational pattern of values change with changes in behavior, e.g. rising levels of cohabitation, independent living and divorce, an increase of single parenthood, etc. Undoubtedly, Inglehart's values theory primarily emphasizes that values influence choices people make. A reversed causation is not explicitly discussed. Whereas Inglehart focuses on *historical conditions* during the formative years, Kohn claims that values are directly influenced by *here-and-now experiences* at the workplace. In Kohn's theory values play a mediating role in relating social structure to behavior. As such he primarily focuses on *temporal conditions* rather than historical circumstances. The key argument of the Kohn-thesis is that the normative requirements of a job generate values orientations which are appropriate to the actual circumstances of the job. Hence, the relationship between social class and values can be explained by referring to occupational conditions - i.e. the level of occupational self-direction. Generalizing this point of view one could argue that people learn to value characteristics that are appropriate to their conditions of life. Different from Inglehart the adaptation of values to changing conditions is highlighted. At first glance, both theories yield contradictory propositions. At second glance, however, both theories can be reconciled because they bring together different mechanisms that generate values orientations, i.e. values may be socialized (Inglehart) as well as learned by taking up social roles (Kohn). Furthermore, even their difference in locus regarding the issue of values stability and values adaptation need not imply contradiction. To Inglehart values influence behavior because values are relatively enduring characteristics of individuals. Although Rokeach (1973) holds a highly similar position, he also demonstrated within experimental designs that values may change due to strong 'incentives', e.g. dramatic or intense experiences (Ball-Rokeach, Rokeach & Grube (1984). Kohn's theory suggests that - given the centrality of work in the life of people - the everyday experience in the workplace may function as such. Consequently, Inglehart's notion of relatively enduring values orientations after the formative years is compatible with Kohn's argument about the significance of temporal occupational conditions. After all, important changes in the life-course may re-affirm values rather than altering them. Young people valuing a traditional family life may decide to marry for that reason, ànd may find affirmation of their opinion by the very experience of marriage itself. Hence, even stability forms part of a dynamic process. As a consequence, the key question is no longer *whether* values change after the formative years, but *when* (e.g. under what conditions) they do so. By the same token the dynamics of the values-behavior relationship becomes manifest. Values influence the choices people make and the consequences of these choices - in turn - re-affirm or alter the values these people hold. Within demography reconciling both theoretical perspectives is important since there is little doubt that changes in family life are intense experiences. As the research of Thornton and colleagues (1987 & 1992; see also Axinn & Thornton, 1992 & 1993) has demonstrated both historical and temporal experiences affect demographic transitions. Hence, a life-course approach focusing on the sequential and recursive relationship of values and demographic transitions is most appropriate.

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