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Science without Laws? Model Building, Micro Histories and the Fate of the Theory of Fertility Decline

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Abstract: The present article takes stock of older and newest research on fertility decline in order to determine the present perspective of historical demography. By referring to different approaches to the development of scientific research programmes, the attempt is made to ascertain whether the historical studies of fertility change are on the way from a progressive stage to one in which researchers are increasingly forced to respond to an ever-growing list of counter-examples and nuances. In this context the reconsideration of the demographic transition, as is has been formulated by the Princeton-group, plays a central role. It has been for a long time the point of reference of all historical demographic research. The implication of this theory and its scientific discussion are outlined in their main aspects (innovation, stopping behaviour, cultural explanation, macroperspective) and confronted with the countervailing evidence. The Princeton-model has not totally disappeared as a point of reference, but there is a clear tendency towards a proliferation of discourses, so that one wonders, if affirmation of heterogeneity is not the only way to generalize in historical demography. In contrast the article pleads for a reinforced effort in the domain of theory to get out of the epistemological crisis of the discipline.

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Instead of approach towards consensus, there has been a proliferation of theoretical statements, many identified with one or a few persons or 'schools' of demography (or, increasingly, of methodology), and typically with strong emphasis on one variable or variable set (economics, culture, family planning) as a central or fundamental to fertility decline. Confrontation rather than synthesis seems the order of the day. (T.K. Burch 1996: 60)

Three decades ago, there was wide consensus on why fertility falls. Now, however, it seems that the closer we get to understanding specific fertility declines, the further we move from a general theory of fertility transition. (S. Greenhalgh 1990: 85)

Changes in reproductive patterns and the spread of a deliberate control of fertility due to the so-called demographic transition have been among the central focuses of the research within post-war historical demography. The question whether marital fertility both in past European populations and in their contemporary Third World counterparts could have been intentionally manipulated constituted a sort of "meta-theme" for much of historical demography and population studies well into 1980s (Hirschman 1994; Friedlander, Okun and Segal 1999)[1]. Whether perceived as a sociological "grand theory" with revolutionary implications or something that fulfills the claims of Merton's middle-range theory, or simply as one of the best-documented generalizations in the social sciences (Cowgill 1963; Kirk 1996: 361, 383; McDonald 2001), the concept of the demographic transition embodied the very nature of demography as a social science (Caldwell 1996, 2000; Burch 2000: 2; McDonald 2001:1).

However, for the last two decades fertility-focused research has faced decisive reformulations of the state of the art. It has also confronted the challenges to almost all its initial presumptions, models and theories. Independently of methodological progress, this critical process has been accompanied by an extensive accumulation of detailed empirical knowledge about particular regions and locations which has emphasized localized cultural, economic and environmental factors affecting family formation rules and couples' reproductive decisions in a variety of ways. Unfortunately, this new evidence has been piling up faster than its theoretical implications could have been assimilated. What we have instead are increasingly micro-histories that stress the heterogeneity and diversity of historical phenomena that can hardly serve to build a

[1] Historical demography as an independent discipline or as a recognisable sub-discipline of demography, is here defined in broad terms as that which applies demographic methods to the study of historical populations. To my knowledge, there is no existing in-depth study of historical demography's disciplinary identity that goes beyond the pure description of its scope, methods and sources, and would tackle the issues of its epistemological nature. See: Henry 1968; Van de Walle and Kantrow 1974; Willigan and Lynch 1982. Comp. with Riley and McCarthy 2003 (ch. 3, 4, 5).

coherent theory of the past demographic and family processes. The task of accommodating the diversity of these historical paths into a common theoretical framework remains the most serious challenge for the field (Hirschman 1994: 203; also Van de Kaa 1996: 390-391)[2]. It seems equally true, however, that rather than a lack of a proper theory of the fertility decline it has been a trend toward particularistic explanations that have caused the present confusion within fertility research (Burch 1996: 60-61). This proliferation of discourses, as it will turn out, is posing a serious threat to the disciplinary identity of historical demographic studies that has been taken for granted by two generation of scholars. What I will seek to argue is that the prospects of the future historical fertility studies seem to be conditioned to a much greater extent upon a deeper theoretical reflection, than on the further empirical progress and technical advancement. Although some attempts have already been made to pursue that goal (McNicoll 1992; Hirschman 1994; Van de Kaa 1996; Mason 1997), the decisive epistemological and disciplinary questions have only been rarely raised (Riley and McCarthy 2003; Burch 1996, 2000; Lesthaeghe 1998; Lesthaeghe and Vanderhoeft 2001). This essay seeks to find its own way to stimulate further the discussion of these issues.

In Search of a better Explanatory Framework

The increased capaciousness of discourses on fertility decline has been lamented so far by at least some of those involved in demographic research (besides the authors of the opening quotations, see: Woods 1987: 283; van de Walle 1992: 487; Johansson 1993: 375; Alter 1992: 13; McNicoll 1992: 404; Hirschman 1994: 214; Mason 1997: 443). Various metaphors have been used to denote the proliferation of statements on the topic. In one of the most intellectually appealing interpretive endeavors, the demographic transition theory is treated as a narrative told in different ways by different observers while debates surrounding the issue of the determinants of fertility behaviour are seen as the development of a series of sub-narratives from different disciplinary perspectives and orientations (Van de Kaa 1996: 389 ff). Different parts of such sub-narratives – so the argument goes – "have been highlighted at different times depending on policy interests, improvements in technical skills, availability of data, changes in societal settings, and the degree of satisfaction with the dominant sub-narrative of the day" (Van de Kaa 1996: 389-390). The approach used by Van de Kaa, however, led him to overlook some important aspects of the problem. The approach used by Van de Kaa, however, led him to overlook some important aspects of the problem. Instead of treating different stories

[2] T.K. Burch (2003) sees that process as related to the general lack of theory-driven research in demography.

about historical fertility transition as parts of a broader structure in which they constitute the deepest layer – as he ultimately did, following A. MacIntyre (1980, 1988: 354-364), my proposition would be to view them as the manifestation of what can be termed an "epistemological crisis" of the discipline. Its proper understanding requires looking carefully at the disagreement that shatters historical studies of fertility change and investigate that research field as the place where divergent and often *incommensurable* scientific discourses are increasingly clashing.

MacIntyre has advanced a framework for the analysis of transformation of scientific traditions (MacIntyre 1988: 349-369) in which they are characterized by a recurrent developmental trajectory across three phases. In periods of stability – authority, texts, and beliefs have not yet been put into question, they simply offer the adherents of a given tradition a coherent knowledge system that enables them to investigate and explain the outer world. This phase resembles T.Kuhn's account of "normal science" which refers to the relatively routine work of scientists experimenting within a paradigm, but not actually challenging or attempting to test the underlying assumptions of that theory (Kuhn 1970: 52). A discipline's epistemological crisis emerges in the second phase when inadequacies and incoherencies are identified within the given tradition, partly due to the encounters with particular rival traditions, partly due to increasing insufficiency of previously adhered concepts and theories in day-to-day "puzzle-solving". Hitherto trusted methods of enquiry become sterile and have the effect of disclosing new problems for the solving of which there seem to be no resources within the established fabric of belief (MacIntyre 1988: 355-356, 361-362). This leads to the dissolution of historically founded certitudes within the discipline. Finally, in the third phase, necessary reformulations are identified within a tradition and its further conceptual development takes place. This happens owing to the operation of an imaginative conceptual innovation among the discipline's adherents which enables them to invent new concepts and theories that furnish a solution to problems that had previously proved intractable.

In the following sections, MacIntyre's framework is taken as a starting point to review changes that have occurred in the perception of historical fertility decline, with the intention of exploring the nature and the sources of the present crisis of historical demography. Through an exploration of tensions and dilemmas that threat the study of history of reproductive change an attempt is made to discern the landscape of MacIntyre's stage two of the major scientific tradition devoted to the understanding of the history of declining fertility[3].

[3] This essay is focused primarily on couples' reproductive behaviours within pretransitional and transitional populations of historical Europe and America, with no attempt to investigate the distinct although related subjects of epidemiological transition and contemporary fertility change in other parts of the world. It does seem, however, that the latter two topics face similar proliferation of discourses and may likely give birth to similar epistemological

From the Theory of Demographic Transition to the "Princeton Paradigm": a "replacement effect"?

An initial narrative, or – in our terms – the initial scientific tradition focused on the determinants of historical fertility behaviours is represented by the so-called Theory of the Demographic Transition as developed and formalized by Frank Notestein and his colleagues at the Office of Population Research in Princeton (Notestein 1945, 1953). The recognition of Notestein's drawbacks in approaching pretransitional reproductive behaviours and major correlates and causes of fertility decline led in the late 1950s and 1960s to the emergence of some early rival traditions and heterodox discourses[4]. They took the form of Davis and Blake's socio-cultural framework for fertility analysis (1956), some early formulations of an economic theory of fertility (Leibenstein 1957), Carlsson's seminal distinction between adjustment and innovation in fertility change (1966), and Kingsley Davis' theory of change and response (1963). As will be shown later on, some of these distinct approaches were to be then refreshed and reiterated in 1980s and 1990s.

However, for the authors of the transition theory there was no more dramatic encounter than that with some of their own pupils and fellows. It was Ansley J. Coale, Notestein's successor at the Princeton Office of Population Research who mobilized all the conceptual innovations available at that time to test the suppositions of his predecessors. Grounded on-time series data on fertility and modern computational facilities, the Princeton Project was to present a systematic collection of statistical data documenting fertility and related socio-economic changes in several hundred provinces of Europe during periods of major fertility decline and to test the associations between specific indicators of modernization and fertility change. In fact, the impact of the Project on the

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dilemmas. The literature surrounding the post World War II fertility decline in non-European countries has been particularly rich and varied, and demographers are still far from achieving any kind of consensus on precisely which factors are reponsible for triggering and sustaining it (see Population and Development Review, Vol. 27, Supplement: Global Fertility Transition, 2001). As for the epidemiological and health transition issues, see Grundy 2005. My focus here is predominantly on the research published in English that has appeared between 1945 (Notestein's formulation of the demographic transition) and the most recent years.

[4] The theory implied that: 1) transition takes a form of universal and linear process; (2) pretransitional high and uncontrolled fertility was socially and culturally legitimated response to heavy mortality characteristic; (3) traditional cultural prescriptions favouring high fertility can be transformed by "the forces of modernization"; (4) during the early phase of the process fertility remained uncontrolled while mortality declined. The demographic transition theory was charged with being a grand historical generalization too broad and based on a variety of *ad hoc* assertions (see Leibenstein 1974: 460; also Hirschman 1994: 211). P. McDonald (2001) pointed to the theory's incoherency with some of the crucial postwar and recent fertility phenomena.

status of the classic demographic transition theory was disruptive, even if it provided evidence both supportive as well unsupportive of it[5].

However, there is much more to say about the Project. It resembled fairly well a scientific community responsible for advancing what – in accordance with T. Kuhn – can be termed as a paradigm-based research[6]. Despite its international and cooperative character, the Project had a distinct and coherent scientific profile. It consists of demographers, statisticians and economists, but not historians. It used standarized scientific procedures (multivariate analysis of large scale aggregates; fertility indices) developed to test initial hypotheses in a formal and rigorous way. Many of its members followed a similar educational path[7]. The Project also had a common institutional background rooted mainly in American universities and was headquartered at Princeton's Office of Population Research having at its disposal resources acquired from the largest American foundations. During its 23-year research program (1963-1986) the Project published several books and many articles, all designed alongside comparable modes of representation (i.a. Coale and Watkins 1986; Coale, Ander-

[5] The Princeton findings revealing that, generally, the declines in crude death rates and crude birth rates looked like stage two of the classic theory, and suggesting that prior to general fertility decline family limitation was largely absent did not depart very much from Notestein's original statement. More important, however, were the arguments that, overall, pre-transition fertility was lower than expected, fertility fell before mortality in some contexts and that the correlations between modernization and onset of fertility and mortality decline were weak; see Coale 1973; Coale and Watkins 1986.

[6] Paradigms as "exemplars" referred to particular, concrete achievements that defined the course of all subsequent research in a scientific discipline. Paradigms as "disciplinary matrices" refer to an entire theoretical, methodological, and evaluative framework within which scientists conduct their research. This framework constitutes the basic assumptions of the discipline about how research in that discipline should be conducted as well as what constitutes a good scientific explanation. Kuhn believed scientific communities to be the communities of scholars centred around common scientific authorities, united by education, professional interaction and communication, as well as similar interests in problems of a certain sort and acceptance of a particular range of possible solutions to such problems (Kuhn 1970: 174-210; also Masterman 1970: 59-90). It must, however, be admitted here that interviews I carried out during 2006 (research grant from the Polish Science Foundation) with some of the previous members of the PEFP (R. Lesthaeghe, J. Knodel, S. Watkins, M. Teitelbaum, B. Anderson) revealed no agreement among them about the supposed paradigmatic nature of the Project's research activity. Nevertheless, I do not think this poses a serious threat against the perspective suggested here.

[7] Studies in maths, statistics, sociology and economy, rarely in humanistic sciences; membership in Population Association of America, American Sociological Association, International Union for the Scientific Study of Population, Social Science History Association. A majority of the Project's members spend at least some time as research fellows and associates at Princeton or have been employed at OPR. Some of the most active associates (S.C. Watkins, J. Knodel) got their doctorate degrees at Princeton working under the guidance of A.J. Coale.

son and Härm 1979; Knodel 1974; Lesthaeghe 1977; Livi Bacci 1971, 1977; Teitelbaum 1984; van de Walle 1974)[8].

Furthermore, the members of the Project to a large extent shared a common mindset for they agreed upon the following specific issues. First, most of the Princeton-related scholars assumed that prior to the onset of fertility decline, the practice of family limitation was largely absent. Couples in pretransitional societies made no conscious attempt to control the number of births, and the probability of a women giving birth was independent of the number of children already born, that is – it was parity-independent (Coale 1986: 9-10; comp. Coale 1973: 66). The very concept of family limitation was regarded as alien to the mentalities of pretransitional couples, while the use of techniques of birth control, particularly within marriage, was not only unknown but also "simply unthinkable" (Knodel and van de Walle 1979: 219, 227, 229; also Knodel 1977: 224-227)[9]. In other words, it was believed that within pretransitional settings at least two of the three specific prerequisites for a decline in marital fertility listed by Coale were lacking (Coale 1973: 65; Knodel and van de Walle 1979: 229)[10].

The shift towards fertility regulation and its subsequent fertility decline resulted from an innovative behavioural change initiated by some segments of the population and marked a fundamental break with past patterns of marital childbearing (Watkins 1987: 649; Knodel 1988: 455). It took the form of parity-dependent fertility control, which has been known as *stopping* behaviour. It was stopping behaviour rather than lengthening of birth-intervals that was considered responsible for precipitating the fall of fertility to modern levels (Knodel and van de Walle 1979: 233; Knodel 1987). Such a view of the reproductive mechanism was based on several assumptions which were taken for granted despite some members' recognition of the limited appropriateness of the Project's methods in detecting behaviours different from stopping and despite some countervailing evidence being available (Knodel 1977: 241;

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[8] The works of J.Knodel (1988) and S.Watkins (1991) have been published after completion of the Project, but – despite some methodological differences – can be subsumed under the rubric of "the Princeton view". Other important extensions of it: Watkins and Bongaarts 1996, and Lesthaeghe and Vanderhoeft 2001. The original stimulous for the Project came from Leasure 1962.

[9] The idea of the "unthinkableness" of the fertility control in past populations comes from P. Aries' research on the history of mentality; see Aries 1972: 10 ff.

[10] Pretransitional couples were seen as either "unready" to engage into family limitation (their reproduction sphere was not within the calculus of conscious choice) or "unable" to do so due to the lack of effective techniques of fertility reduction. It was their willingness to curtail fertility that was believed to be possibleamong them (Knodel and van de Walle 1979: 229-231; comp. Coale 1967: 208). The "ready, willing and able model" although derived from Coale 1973's paper, has been thoroughly conceptualized much later by Lesthaeghe and Vanderhoeft 2001. A seminal English usage of Coale's model is represented in Wrigley 1978.

Watkins 1986; Lesthaeghe 1992: 11-12)[11]. Additionally, the Project downplayed the importance of economic and social change (often simply labelled as 'modernisation') in causing the fertility transition and instead stressed a process of ideational change, that is diffusion of innovative behaviours driven by similar attitudes and communication networks spread along linguistic, religious or ethnic commonalties (Coale 1971: 18; Knodel 1977: 240-247; Lesthaeghe 1977; Livi-Bacci 1977: 136-137; Coale and Watkins 1986; also Cleland and Wilson 1987).

The contribution of the Princeton Project to the understanding of European demographic past was manifold, as was its impact on many historical demographers in Europe and the USA. After dismissing the main components of transition theory, "the Princeton view" became a new influential orthodoxy well grounded in its institutional omnipotence, the Project's unprecedented scale as well as the pervasive agreement of its members about the nature of fertility change (Coale and Watkins 1986)[12]. Although many of the Project's members initially rejected the possibility of finding any grand generalizations about the European fertility decline (esp. Coale 1967: 208; also Leasure 1962: 240), the Project nevertheless established its own "grand theory" based on ideational and diffusion explanations. At the end, it prescribed what was to be observed and scrutinized, the kind of questions that were supposed to be asked and probed for answers in relation to this subject, *how* these questions were to be put, and how the results of scientific investigations should be interpreted[13].

For the last two decades since the publication of the Project's summary volume, however, this strong intellectual identity has been effectively fragmented

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[11] Szreter and Garrett 2000: 48-50 present a reasonable account of policy-related issues upon which the Project's focus on parity-dependent forms of fertility control was conditioned.

[12] A comparison of Princeton final statement (Coale and Watkins 1986) with particular monographs and articles of its members reveals, however, a certain room for subtle differences in opinion on several specific topics, particularly after the Project's completion. See for example: Lesthaeghe 1992: 10-15 (on reproductive strategies different than stopping and on the inefficiency of the Project method's to detect them); Lesthaeghe and Vanderhoeft 2001: 242-245 (on the misinterpretation of the PEFP findings in terms of "culture *versus* economics"); Livi Bacci 1977: 4, 7, 285 (on the variety of predecline fertility behaviours and attempts to control fertility through spacing before the fertility decline); Livi Bacci 1971: 79, 94, 99 (on the presence of pretransitional fertility control); Watkins 1987: 650-651 (on the presence of "the calculus of conscious choice" in the past). Also Anderson 1986: 313 (for a critical view of aggregate methods and the need for particularistic explanations).

[13] See Cleland and Wilson 1987: 17-19 on the links between the Princeton findings and the theoretical orientation of the World Fertility Survey. The Project's theoretical and methodological advances have also become the basis for some subsequent research, such as Norwegian Fertility Project (Oslo, 1980-1983; see Sogner 2003), K. Lockridge's extensive study of fertility transition in Sweden (Lockridge 1983) and Matthiessen's in Denmark (1985). They form a starting point for much of the current historical demographic research on fertility change (for example, between 1989 and 1998 a quarter of articles in *Demography* and *Population Studies* dealing with fertility decline in historic Europe used Coale's indices of fertility; see Wetherell 2001: 590).

and transformed into antagonistic and often incommensurable discourses on what happened to historic fertility. This process is to be investigated now, with its three main areas of scientific contention reviewed: (1) about the nature of the change in reproductive behaviours; (2) about the determinants of fertility change; (3) about the character of the transformation process[14].

The Nature of the Change in Reproductive Behaviours

(A) How natural was "natural" fertility?

As for the first issue, it is proper to elaborate the changes that affected one of the building blocks of the Princeton view that is the concept of "natural fertility". Coale and his associates were quite convinced that much of the premodern population of Europe should be considered as practicing "natural fertility" (Henry 1961; Coale 1986; also Knodel 1977, 1978). Besides adopting Henry's perspective on the concept, Coale also posited three preconditions for the incidence of fertility control and argued that they were largely absent before the secular decline in fertility (Henry 1961; Coale 1973). His scepticism about the existence of pretransitional fertility control was not only influenced by Henry's persuasive account but might also have been driven by the results of the early demographic surveys of non-European populations (Caldwell and Caldwell 2003: 202)[15]. This hegemonic discourse claiming that before the secular fertility decline historical populations had mostly practised natural fertility seems to be have been challenged by the plenty of heterodox approaches.

As early as the 1960s Carlsson (1966) argued that fertility was probably deliberately controlled before the decline of the late 19th century. Almost at the same time, Dupaquier and Lachiver (1969) recognized the possibility of rational limiting of births among both natural fertility and transitional popula-

[14] The scope of the present essay allows no space to investigate the no less important subject of the contention over methodology of detecting couples' different fertility strategies. See: Page 1977; Guinnane, Okun and Trussel 1994; Okun 1994, 1995; Wetherell 2001; Brown and Guinnane 2006; Van Bavel 2004.

[15] According to Caldwell and Caldwell 2003: 201-202, the twentieth century demographers – and especially early Princeton based OPR scholars – were initially far less sceptical of the incidence of pretransitional contraceptive practices (see Notestein's reception of N.Himes' 1936 book in: Stix and Notestein 1940). A. Coale and his associates, however, seemed to be influenced by their own – and equally justified – reading of Himes in stressing the predominance of the desire to control fertility over its actual practice and in promoting the technological-diffusionist interpretation (Himes 1936: 421; Coale 1973: 61-62). It is important to note that in the Princeton's orthodoxy variation within natural fertility patterns has been considered to be a "relatively unimportant curiosity" rather than the evidence of diversity in reproductive behaviours in the past (see Kodel and van de Walle 1979: 233; Szreter and Garrett 2000: 49-50).

tions. These initial insights were later confirmed by several other local studies. They revealed the presence of fertility control much earlier than originally supposed, but not solely confined to groups of mainly urban "forerunners" (Wrigley 1966; Gaunt 1973; Levine 1977: 64-67; Andorka 1979; Smith 1987; Landers 1990; Vann and Eversley 1992: 136-140; Fauve-Chamoux 1995). Even Knodel's bold statement of little, if any family limitation as practiced in rural Germany before the late 19th century fertility decline (Knodel 1978, p. 483) has been questioned by other German family reconstitution studies. The latter clearly revealed a periodic application of fertility control at historical periods long before the secular decline (Gehrmann 1984, p. 224 ff; Lee 1977: 40-51; Benz 1999). More recently David and Mroz (1989a, 1989b), David and Sanderson (1986) as well as Santow (1995) have all argued that what must be viewed by today's standards as having been a regime of high marital fertility, was not at all the same thing as a regime that left the fertility of marriages unregulated. Methods of deliberate birth control (abstinence or *coitus interruptus*) seem to have been practised long before the beginning of the secular fertility decline, even without any couples' intentions to reduce family size (also Szreter and Garrett 2000: 52 ff.)[16].

Part of this countervailing evidence presented so far resulted from detailed investigation of local contexts that made it possible to uncover what had been obscured by the Princeton's aggregates. Some represented a spirit of econometric sophistication coupled with a dogma of universal human rationality and maximizing behaviour extended on human reproduction. However, there was also a more distinct tradition of inquiry, markedly different from the Project's assumtions and characterized by an understanding of pretranstional populations and agents. From such a methodologically different stance, drawing upon anthropological reading of historical literary sources, A. MacLaren questioned not only the presupposition of the unthinkableness of fertility control in past societies, but also the concept of natural fertility as such (MacLaren 1978, 1984). Against the Princeton assumptions and evidence (but in line with early intuitions of Judith Blake; see Blake 1985), he argued that historical agents were not passive with regard to the reproductive sphere, and that there was no behavioural revolution behind the dramatic secular fertility decline of late 19th century (MacLaren 1984: 87)[17]. But that was only the tip of the iceberg. In fact, Maclaren referred to a much wider anthropological tradition that since the

[16] Szreter and Garrett who argued that in pretransitional England reproduction was within the realm of the conscious choice were, however, concerned mainly with the widespread practive of delayed marriages and with the pattern of "starting" behavior.

[17] J. Blake (1985: 394-397) asserted that fertility decline should be seen as an extension of the purposive controls over reproduction that existed prior to the fundamental changes of 19th century and that the whole process itself had much more of continuity with the past than it was supposed. This implied that motives for fertility control existed prior to "modernization" whenever fertility has become greater than people wanted at a particular time. Recently, Szreter and Garrett 2000: 48, reached similar conclusions.

seminal A. Carr-Saunders' *The population problem* had claimed that the conscious and voluntary regulation of numbers may well have been one of the earliest features of human culture (e.g. Carr-Saunders 1922, p. 197 ff.; Krzywicki 1934; Polgar 1971a, 1971b; Cashdan 1985; also Himes 1936). That even without access to modern contraception people took steps to limit their family sizes is a view now fairly widespread in recent anthropological works (Greenhalgh 1995b: 15; Kertzer and Fricke 1997; Caldwell 2004)[18].

(B) Starting, stopping, spacing

Another aspect of the hegemonic tradition confined to fertility strategies has been challenged even more, involving a revision to existing scientific beliefs and practices. Against the theoretical suppositions of Princeton Project, some other scholars have found the lengthening of birth intervals a more realistic portrayal of decision-making process within past societies than reliance on parity-dependent fertility control. To them, what was a far more widespread motivation for contraceptive use than just a simple desire to limit family size, was an intention to ensure that births do not come too close together, especially given the imperfect techniques of contraception. Serious doubts have also been expressed about any *a priori* theoretical reasons for counting parity-independent fertility control as "natural" and thereby excluding it from the category of controlled fertility (Cashdan 1985; Landers 1990: 96-100, 107; recently, Van Bavel and Kok 2004: 120)[19]. In consequence, during the last two decades the role of "spacing" as a family building strategy in pre-transition and transition societies went to the heart of the crucial debates on the character of reproductive behaviours and demographic change. This unfinished and continuing battle (see Van Bavel and Kok 2004; Bengtsson and Dribe 2006) has already brought about the dissolution of several building bocks of the Princeton scientific tradition.

Again, the provenance of revisionists may have varied significantly. Some were driven by the need to equip existing historic demographical studies with statistical methods considerably more refined for discerning birth spacing behaviours as elements within more complex strategies of family limitation (Alter 1988: 163-195; David, Mroz and Wachter 1985; David and Mroz 1989a,

[18] However, there is no agreement on that issue even among mainstream anthropologists. See for example: Handwerker 1983. J.C. Caldwell (2004) restricted his tentative assertion of fertility control in Ancient Rome to the sectional fertility decline among Roman upper-classes.

[19] Implicit in the Princeton's view was the assumption that the entry of rationality into the sphere of reproduction required couples' conscious calculations and their anticipation of long-range benefits from an attempted (desired) family size; Knodel 1977: 241. Later on, Knodel (1988: 318-319) attempted to explain the Project's heavy focus on stopping at the expense of spacing by "the greater ease with which deliberate stopping can be detected compared to deliberate spacing".

1989b; Okun 1995; Ewbank 1989; van Bavel 2004). Other have reified an older assumption of Kingsley Davis that fertility has always responded to the environmental context (Davis 1963). Those adduced evidence of deliberate non-parity specific fertility control before the fertility transition, which responded to particular social, economic and demographic factors in order to maintain a target living standard, rather then an ideal family size (Weir 1983: 136 ff.; Anderton and Bean 1985; Gehrmann 1984; David and Mroz 1989a, 1989b; Landers 1990: 106 ff.; van Bavel 2003; 2004b; Bengtsson and Dribe 2002, 2006).

Some scholars, however, went even further. One of D. Anderton and his colleagues from the so-called Utah project's achievements was the unambiguous identification of birth spacing behaviours within Mormon population both before and during the transition phase of fertility decline. Of much greater substantive novelty were two other conclusions they reached. One posited that a conscious spacing strategy could well have been used to achieve smaller families, and therefore was a parity independent family building strategy not necessary. The other one drew on evidence that the general transition process could well have been associated with an increase in deliberate spacing practices within a population, and rejected the assumption that stopping was the only powerful factor in fertility transition (Anderton and Bean 1985; also Szreter and Garrett 2000). Finally, the authors felt comfortable enough with asserting that prior to the initiation of the secular fertility decline the concept of natural or uncontrolled fertility could be applicable only at the aggregate level, and that within such pretransitional populations subgroups composed of couples limiting family size may be identified (Anderton and Bean 1985: 180-181; also Landers 1990: 100).

In the study of class differentials in fertility in England and Wales, S. Szreter reached similar conclusions (1996: 377-382). He showed that both spacing and stopping may have been applied at different phases by women during their reproductive years, as they were not mutually exclusive family building strategies (p. 381, 433). He also presented comprehensive evidence in favour of spacing rather than stopping as "the typical, primary method of birth control throughout English society during its initial stages of falling fertility" (p. 382). Counter to the foundations of Princeton's paradigm, he concluded that "(…) stopping did not necessarily play a leading role as the principal strategy of fertility regulation (…), but may have been more associated with a later stage of the process" (p. 389)[20].

This evidence cast question on the Princeton Project's conclusion about the very nature of premodern and transition fertility behaviours (Knodel and van de Walle 1979). Far more, studies of spacing and stopping have inevitably led to

[20] Again, wider generalizations in other societies which replicate these findings may be hard to prove. For the countervailing evidence from three Baden villages see Benz (1999).

the posing of more complex questions about premodern and transition family building strategies. It was within this area that further challenges to the hegemonic discourse have appeared and the new methodological ambiguities and inconsistencies within its confines have been revealed.

For example, the Princeton Project's assertion that the diffusion and legitimation of innovative birth control techniques played a crucial role in the fertility decline (van de Walle 1980, 1992: 488 ff.) has come under attack. Again, Szreter's research was among the most path-breaking in this regard (Szreter 1996: 398 ff.). According to him, mass contraception did not play a central role during the initial period of falling fertility in Britain between 1860 and 1914. The only behavioural and cultural innovation that accounts for the early stages of the decline lay in the extension of long-established practice of attempted sexual abstinence among young married adults (p. 398). Szreter was also not convinced about a clear and deliberate purpose and a conscious intention behind this behavioural change (p. 414). By assuming that the practice of abstinence could have easily taken the form of withdrawal, Szreter reiterated the older ideas of MacLaren who had argued that *coitus interruptus* was the principal method of birth control used before appliance methods became more widespread (p. 420). Furthermore, by treating the couples' power relations as the main determinant of the existence of effective birth spacing, not surprisingly, Szreter gave stimulus to new lines of inquiry (Szreter 1999; Fisher and Szreter 2003; Szreter, Nye, and van Poppel 2003).

By using oral testimonies of a hundred English men and women from working-class districts of Oxford and South Wales practicing some form of contraception during the end period of English fertility decline, K. Fisher strengthened Szreter's arguments. She argued that all of Coale's three seminal prerequisites for fertility decline were actually not necessary for successful and systematic birth control (Fisher 2000; Fisher and Szreter 2003). Within the studied sample attempts to reduce fertility took place quite apart from the spread of modern contraceptive technology and rested almost exclusively on traditional methods of withdrawal. Moreover, couples attempting to curtail their fertility did so without having firm or specific views on the precise number or spacing of children desired (Fisher 2000: 300; Fisher and Szreter 2003: 274-276). What's more, even their motivation for fertility control seemed to be ambivalent: much of the revealed contraceptive strategies seemed to be unplanned, while substantial numbers of respondents acted unthinkingly with regard to fertility choices (Fisher and Szreter 2003, p. 276)[21]. In other words, the mentality of those who were capable of controlling the size of their families was much closer to what (according to Princeton standards) would be termed as "pretransitional" or "traditional" (Landers 1990: 96-100). Finally, in Fisher's account, Coale's influential model is considered as a mere simplification that

[21] Similar arguments have been made in Seccombe 1990: 161-171.

distorts the actual complexity of the dynamics of family decision-making (Fisher 2000: 299 ff.).

The Determinants of Fertility Change: Culture *versus* Economics

The issue of the determinants of fertility decline mark another area of the contention concerning the Princeton view and the one in which a clash of countervailing evidence and divergent discourses can be observed. In the works of the Princeton-related scholars the classic demographic and socio-economic variables such as urbanization, literacy, infant and child mortality, and industrialization failed to account for the fertility transition. Accordingly, demographers associated with the Project called attention to regional-cultural and diffusion explanations (Knodel and van de Walle 1979)[22]. Recently, however, the agreement on the Princeton conclusions appears much more flawed than it seemed to be at the time of the summary volume's publication. In what follows I draw on this countervailing evidence[23].

At the early beginnings of the Princeton research, Carlsson presented contrasting view of the changes in fertility as reflecting couples' adaptation to changing economic and social circumstances (Carlsson 1966). However, it was Toni Richards who for the first time attempted to employ refined statistical models to test the Project's conclusions (Richards 1977). Richards' research has considerably shifted the interpretation of Princeton's data by showing that cross-sectional variance in the temporal aspects of the German fertility transition can be explained fairly well through structural change alone (Richards 1977: 546). Specifically, it demonstrated important impact, increasing over time, of industrial structure on the German experience of falling fertility (p. 548, 552).

Some recent studies have come to similar conclusions. The University of California Prussian Project, based on German aggregate data of the late 19th and early 20th centuries, concluded that cultural variables were not important determinants of the *rate* of fertility decline within Prussian counties. The latter was determined to a greater extent by structural and economic variables than by cultural ones (Galloway, Hammel and Lee 1994). Similarly, a recent econometric analysis of the fertility decline within Bavarian counties and districts

[22] More nuanced view on that topic present Lesthaeghe and Wilson 1986; Lesthaeghe 1992.

[23] Some scholars have argued that the lively "culture *versus* economics" debate within fertility studies is flawed. Not only, it is argued, it essentially misinterpretes PEFP findings, but also the whole problem is wrongly posed (see Lesthaeghe and Vanderhoeft 2001: 242; Burch 1996: 65 ff.). Since my goal is essentially to assess the discrepancies within existing discourses rather than to validate the claims or theoretical stances of particular camps against each other, this problem is not considered here.

(Brown and Guinnane 2001) has also nuanced the Princeton's findings. It revealed a small but clear role of economic and social change in the region's fertility history by making clear those areas which had increasing opportunities for women had the most rapid fertility decline. Several other ambiguities in the fertility decline when compared to Princeton's strong emphasis on cultural variables have emerged due to these authors' exploration of the rich micro-level data for the city of Munich (Brown and Guinnane 2005)[24].

Additionally, G. Hammel in his study of demographic behaviour in the Northwest Balkans revealed a commonality of demographic trends *across* major cultural and linguistic differences, but demographic differences *within* a much more closely defined cultural commonality, and argued that all were associated with economic and political factors (Hammel 1995)[25]. Last, but not least, M. Haines (1979), A. Hinde (1990: 78 ff) and S. Szreter (1996: 319) – albeit from different methodological positions – have claimed that a localized, complex interaction of demographic, economic and social factors shaped fertility differentials among different subpopulations of particular communities. That was also the case in the Italian community of Cassalecchio, where Kertzer and Hogan (1989) found not only a clear relationship between the type of household economy and the timing of the fertility decline among different subsets of the population, but also some indication of fertility behaviours relatively independent of processes of cultural change (p. 148, 163-170, 176-178).

However, the actual role of cultural factors in the European experience of declining fertility seems to be far from solved. It seems that the next round of the match between Economy and Culture has already been initiated. On the one hand, the introduction of less mechanistic approaches to economic and cultural explanations of reproduction within the so-called political economy of fertility moves us further away from the once uniform discourse of the hegemonic tradition. On the other hand, it reifies the role of cultural factors and mechanisms that were present but poorly defined within the works of the Princeton demographers (Greenhalgh 1990; Kertzer and Hogan 1989: 152; Kertzer 1995). Here, I refer to two representative studies.

A study of reproductive change in the Sicilian town of Villamura showed that socio-economic and cultural differences could have operated together in accounting for the fertility decline. The Schneiders explain sharp differentials in the timing of the fertility decline in Villamura in terms of socio-economic

[24] A small but evident fertility control among Catholics; strong income correlation with the propensity to fertility control.

[25] In my perception, differences between these researches and the Princeton's view cannot be attributed solely to differences in the statistical models applied or to the reduction of scale. In this regard rejection of Princeton's conclusions could have also had a disciplinary reason for almost all of the scholars discussed here came from within a similar economic tent and may well have shared an opinion that rejection of economic causation in fertility decline is "contrary both to intuition and to theoretical expectation" (University of California Prussian Project Report, p. 1, <http://www.demog.berkeley.edu/prussia/prussia.report.pdf>).

differences between different class-groups and the ways they responded to changing macroeconomic and political factors. However, they also believe that among all the groups they studied the fertility decline could have occurred through distinct cultural propensities that facilitated the adoption of birth control at different points in time (Schneider and Schneider 1992). Neither "classism", nor "culturalism" – the Schneiders argue – can properly explain the changes in agents' reproductive behaviours (Schneider and Schneider 1996: 191 ff; 1998: 179)[26].

Similarly, with explicit reference to Princeton's approach, M. Segalen in her study of two examples of the late French fertility decline has pointed out that the advent of birth control must be studied in terms of local cultures as they are embedded in close-knit communities with the whole complexity of their institutional arrangements (Segalen 1992). In Segalen's approach, it is culture as anchored in particular forms of domestic organization and inheritance patterns that mediates between economic forces and couples' immediate reproductive decisions[27].

Even without referring to such multilayered and interdisciplinary research other indications of the subtle play of cultural factors in fertility decline can be detected outside the Princeton circle. Bardet and Dupaquier, for example, in seeking to explain how and why the transition in France preceded similar developments in other European countries, have put forward a hypothesis of Parisian influence on peasant cultures. By stressing the role of the various contraceptive methods used, the authors emphasized cultural rather than socio-economic explanations for the fertility decline and argued that both birth control and the French Revolution were products of cultural changes (Bardet and Dupâquier 1986; also Chesnais 1992: 333-338). From a different geographical milieu, M. Gutmann in his study of the fertility decline of German-Americans in 19th-century Texas (Gutmann and Fliess 1993) found striking fertility differentials between Catholics and Protestants. According to Gutmann, they incorporated differences in both religion and secularisation, and were important forces affecting both the timing of fertility decline and overall levels of fertility within the subsets of population. Furthermore, Gutmann's multivariate analysis demonstrated the significance in fertility decline of other cultural variables such as ethnicity and language spoken, although not independently of socio-economic ones.

The last study which should be mentioned here is a path-breaking investigation into fertility change in central rural Sweden (Lockridge 1983). In his attempt to explain the early and simultaneous signs of family limitation in three

[26] Concurrently, Schneiders (Schneider and Schneider 1992: 148; 1996: 9) made a significant attempt to reject the diffusion hypothesis in a form it took in the writings of Princeton related scholars while substituting it with the subtler view of cultural dynamics.

[27] A.W. Carus and S. Ogilvie (Carus and Ogilvie, *forthcoming*) have recently provided a large number of research examples carried out using similar methodological framework.

localities, Lockridge stressed that they seemed to share no common social or demographic structure (p. 48-54). Rather than this, they shared a relatively secularised cultural climate (p. 58-59). Finally, he went so far as to argue that cultural change was the only universal and necessary local precondition for the fertility transition (p. 68).

Transition or Transitions? The Character of the Transformation Process

The last controversy to be discussed here is no less troublesome for the once dominant view of the transition process. It is within this area that the theoretical incommensurability of the rivalry and opposite discourses often becomes apparent as severe incoherencies in the very portrait of the past demographic processes begin to emerge.

According to European Fertility Project the fertility transitions in all European countries (with the exception of France, Ireland and Albania) began at nearly the same time and had the feature of an apparent simultaneity. They were sudden, sustained, and monotonic; their diffusion was pandemic and irreversible. After the first appearance of family limitation in an area, it infected different subsets of population, populations and national societies almost instantly (Knodel and van de Walle 1979: 234-235). Several pieces of countervailing evidence make such a perspective on the transition process untenable[28].

One of the first intuitive insights into the compositional nature of the general fertility decline comes from M. Haines' research on fertility in mining communities. Haines' initial exploration of occupational fertility differentials in the industrializing environment of Prussian Upper Silesia led him to argue that the pattern and speed of a particular transition process may depend to a large extent on the occupational structure of a given population. That was so because particular occupations were usually bound with peculiar residence patterns, earning possibilities, extent of women's labour market participation, nuptiality and mortality regimes, and patterns of conjugal relations – all affecting fertility outcomes (Haines 1979). In other words, the general methodological conclusion from Haines' research would be that that proper understanding of the nature of the fertility decline requires decomposition of aggregate trends. It was only behind these aggregates that Haines was convinced it was possible to observe the subtle and complex interplay of local economic and ecological

[28] In addition to what follows, it has been demonstrated that the Project's methodology was ineffective in detecting properly the early signs of family limitation and fertility decline in general (Guinnane, Okun and Trussel 1994; Brown and Guinnane 2006). The most severe criticism of the Princeton's methodology has been presented by B.S. Okun (1992) who argued that the Project's key empirical findings with regard to fertility control may be invalid as based on inefficient estimation techniques (see e.g. p. 60, 89, 189-190).

factors affecting fertility strategies of particular sub-sets of population. Therefore, one of the lessons from Haines' research – even if unintended by himself – was one that suggested multiple paths rather than an uniformity in fertility declines[29].

A. Hinde (1990) made a similar point with regard to the prominent regional differences in fertility among rural communities of late nineteenth-century England. According to Hinde these were dissimilarities in households dynamics caused by contrasting work patterns between north-west and south-east communities which were responsible not only for dissimilarity of their fertility levels but also for the different timing of the onset of conscious attempts to curtail marital fertility (Hinde 1990: 78). Although the evidence he presented revealed a parallel decline of fertility across the whole sample it was inconclusive on the contemporaneity of the appearance of the voluntary birth control (p. 89).

Another countervailing example comes from Szreter's *Fertility, class and gender in Britain* (1996). Armed with the compositional perspective he advocated, Szreter argued that researchers should be sensitive to demographic divergences within aggregate national trends. Thus, the microscopic analysis of fertility differentials among 195 occupational categories from the English 1911 "fertility census" led him to conclude there were not one but many fertility declines occurring in England and Wales during the transition period (p. 310). Fascinated by the richness of the historical details Szreter concentrated not so much on central tendencies in observed fertility levels and trends but rather on their variations, which he discerned even within the most closely defined occupational categories. Among the working classes Szreter distinguished more then twenty distinct fertility regimes based around particular industrial sectors, each having distinct local work relations and practices (p. 362-364). According to Szreter, this manifest difference in strategies of family planning is strong testimony against the diffusion of a single new norm or the operation of a single process during the fertility decline in England and Wales (p. 345-346). The latter view, he asserted, should be replaced by "the picture of many geographically and chronologically disparate processes occurring in distinct contexts and for different reasons" (p. 364). For Szreter, the fertility decline in the sense ascribed to it by the Princeton Project was nothing more than an artefact created by aggregation (ibid.)[30].

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[29] Haines, however, was prone to arguing for cross national regularities in occupational fertility differentials (Haines 1979: 247-248).

[30] In his explanation of fertility differentials, Szreter developed the concept of a "communication community". According to Szreter, it was groups sharing the same "language" – in terms of the expected responsibilities and roles of a mother, father, child – which shared the same set of fertility and nuptiality patterns and that this resulted in a diversity not only of fertility, but also sexuality regimes. See Szreter 1996: 362-363, 546-558.

Eilidh Garrett, Alice Reid, Kevin Schürer and Simon Szreter, in their *Changing family size in England and Wales* (Garrett et.al 2001) pushed that argument further. Using the data from the 1891-1919 censuses of England and Wales they also demonstrated evidence in favor of "multiple fertility declines rather than the unitary diffusion process" (p. 14). Contrary to all the traditional assumptions concerning the transition process in England, the authors contended that between 1891 and 1911 there were distinct local demographic regimes throughout the country in which the process of fertility decline took distinct forms. Among the factors responsible for that mosaic of unique demographic changes in England and Wales a "community-level characteristics" – that is specificity of local work culture, patterns of social interactions and gender division of local labor markets – were of prime importance. According to these authors, what has often been termed the English fertility transition actually consisted of myriads of unique transformations at the local level (p. 322).

The collected volume edited by Gillis, Tilly and Levine (1992) reached comparable conclusions, although derived from a different methodological and theoretical orientation. In the introductory chapter to the book, which is often treated as historians' response to purely demographic explanations of the fertility decline, aggregative and macro-structural approaches are criticized in favour of traditional forms of historical narrative, qualitative modes of explanation, perspectives *from below*, and sensitivity to the characteristics of local contexts. Consequently, the editors attempt to "offer no grand theory about why Europe started to limit births so uniformly", but instead sought to design their research in a way allowing to reveal "the many patterns subsumed in the overall decline" (p. 4). The way the fertility revolution was not one but many stories impinged on "cultures of contraception" specific to place and time (p. 5) is illustrated by several essays throughout the volume[31].

Conclusion: the Generalization that Remains

This essay has attempted to review the changes that have occurred in approaches to the historical fertility decline. Historical demographic studies of fertility – once relatively homogeneous and unified around the set of leading principles, transparent and easily recognized and accepted by most of the practitioners in the field – have been gradually transformed into antagonistic and often incompatible discourses. Although in presenting the growing body of evidence from older and newer research we have been dealing with apparently different aspects of the demographic transition process, they all had one thing in common: they represented an ever-growing list of "counter-examples" or "exceptions" to previously adhered-to scientific tradition of the European

[31] See especially the chapters by Gillis, Seccombe, Schneiders and Segalen.

Princeton Fertility Project. How puzzling and fuzzy is the knowledge stemming from the forty years of research into historical fertility decline can be seen in tackling several significant problems. Did past populations deliberately control their fertility or should we rather think of this practice as largely absent before the revolutionary changes of the late 19th century? Did the change in couples' reproductive behaviours implied a mental revolution, the emergence of new concerns about the offspring and innovative fertility techniques? Or, was it perhaps rather an adjustment process that had its roots in practices that were as old as the history of man? Was the fertility decline driven by socio-economic forces, or alternative by cultural ones, or perhaps by both? Was there any common European experience of "the fertility decline", an unitary process of demographic change? Or should we instead speak of multiple fertility declines occurring in distinct contexts and for different reasons?

The current knowledge of these topics makes it impossible to give a conclusive answer to any of these questions. The trend toward scepticism about the Princeton's vision of European experience of declining fertility and toward the latter's particularistic explanations may well represent a new promising path of research. Nevertheless, I would argue, it finally leaves the reader – especially the one sympathetic to social sciences – hard pressed to find any possible generalization. In this regard the forty years of research on the historical fertility decline has made a rather moderate achievement. As early as 1962, in the concluding chapters of his seminal doctoral dissertation, W. Leasure stated that "the above analysis seems to indicate that there is no simple explanation for differential fertility in Spain. The attitudes towards family size are undoubtedly the result of a very complex inter-relationship of variables (...)" and that "it is doubtful whether the relationship will ever be known in any precise way" (Leasure 1962: 220, 240). A. Coale reiterated this argument in the early stage of Princeton Project by asserting that fertility reduction "cannot yet be explained by any simple, universally valid model or generalized description" (Coale 1967: 208). From the perspective of the beginning of the 21st century, then, it may appear that the notion of demographic and reproductive heterogeneity is the only generalization that remains (see McDonald 2001: 2). Putting it differently, it might be said that the ongoing accumulation of detailed demographic knowledge seems rather like a blind alley. Actually, one may argue that the more we know about the past the less we can say about it, at least in terms of a single comprehensive and coherent "grand narrative" (see Greenhalgh 1990: 85).

But is this something that can satisfy historical demographers and demographers of the new millenium? Are they facing a cascade of new and intriguing research findings that foreshadow new and promising avenues of investigation which may ultimately lead to more comprehensive theories built upon cumulative and conceptually integrative frameworks? Or are they perhaps confronted with anomalies in the previously dominant research program which make it

thoroughly inconsistent with observed facts and which prompt them to abandon it entirely in favour of a new more progressive one?[32] Again, opinions are polarized.

Drawing upon Lakatos' perspective on the growth of scientific knowledge, R. Lesthaeghe has recently revitalized the supposedly devaluated Princeton view (Lesthaeghe and Vanderhoeft 2001; Lesthaeghe 1998). Focusing exclusively on Coale's formulation of the preconditions for a fertility decline (somewhat underestimated in the literature, as he argues), Lesthaeghe indicated that – if properly formalized in mathematical and statistical terms – Coale's model can serve as a framework for the integration of dispersed and divergent discourses on fertility (Lesthaeghe and Vanderhoeft 2001: 241). According to Lesthaeghe, this type of model is able to depict the diverse demographic experiences of different populations (2001: 262-263) and hence to integrate supposedly mutually exclusive explanations of fertility phenomena. It is also capable of predicting new facts and new hypotheses. No overarching theory of reproductive behaviors would be achieved this way, but rather a "multicausal configuration based on empirically [and contextually] grounded complementary explanations" (Lesthaeghe 1998: 12).

Such a "liberalized" view of demographic models is also suggested by T. Burch (2001, 2003). Defending the theoretical achievements of demography, he has argued for a redefinition of the meaning of a theory itself and its application in demographic research. Referring to what he called a "semantic school" of philosophy of science Burch posited that all theories should be treated as abstract representations of some portion of the real world with the clear understanding that they are always partial and approximate representations of its infinitely complex nature. In this view, the real question is not whether a theory or a model fits (or predicts) all particular cases from empirical reality, but rather how well it fits the intended aspects of the real world, that is whether the approximation of the model is 'good enough" (Burch 2003: 264, 267). Within such a perspective, the Princeton view of the historical fertility change would still retain some validity and could work as a convenient partial generalization and a useful framework for further research. This holds true especially as it seems questionable – Burch argues – to reject explanations framed at a larger level of analysis solely because they cannot explain variation and change at low levels of aggregation (Burch 1996: 65).

The departure from "grand narratives" in the explanation of fertility changes is also reflected in P. McDonald's recent contribution (McDonald 2001). According to this Australian demographer, the vast variation in the economies, cultures, social and political structures of different societies makes the search for a universal theory of fertility change a fruitless excercise (p. 2). In order to

[32] This distinction roughly corresponds with I. Lakatos' notion of progressive and degenerative research programs, and correspondingly with progressive and degenerative problem shift. See Lakatos 1970.

concentrate its research efforts on profitable approaches, demography should turn away from attempts to propose a grand theory that is applicable to all circumstances and instead make a way to the equivalent of Merton's middle-range theories (Merton 1968). "The generalized theoretical frameworks" suggested by McDonald may serve to discover and explain distinct but related dimensions of the fertility change, but with an appreciation of their particular social, economic and institutional contexts.

Microeconomic, multicausal models of fertility may also be of some help in this regard. For example, the Easterlin's theory of fertility decline has the advantage of dealing both with supply and demand of children, as well as with broadly defined costs of fertility regulation. It also allows thorough operationalization of the wide range of "intermediate fertility variables", while making possible an eventual inclusion of social, psychological and cultural factors in the model at the same time (Easterlin 1975; Easterlin and Crimmins 1985). Rao has recently called with regard to demography for formal quantitative models of human action and agency, which would be anthropologically and locally informed. Such economic models of demographic behavior could be more successfull than purely demographic ones in incorporating the locally and culturally dependent issues of incentives, motives, symbolism and power relations, but would deal with them in terms of mathematical functions and modelling (Rao 1997).

Other works have moved in other direction. Wilson and Airey (1999) have recently argued for the restatement of the "big picture" again and called for a much more generalised version of the demographic transition theory. Drawing upon the homeostatic perspective, they suggested to view the fertility decline just as an episode in the very long-run process at work – the one in which periods of sustained population growth are normally followed by periods of sustained decline whenever population and resources get 'out of balance', in a constant attempt to produce an overall pattern of low growth. In this approach, the geographical, historical and cultural differences in populations' demographic responses are conceptualized within a wider model of the interaction between population and economic growth over the past two millenia.

What is common to the perspectives presented so far is the assumption that the theory (or model) is an advisable, if not a neccessary, precondition for a fruitful examination of empirical data. Some other scholars, however, have argued for a different methodological approach. Discussing the prospects of fertility research, Szreter (1993) contented that it "(...) needs emancipation from the dominance of the abstract ideas of 'demographic' or 'fertility' transition and the associated, too exclusive deference to the covering laws methodology". Instead, he called for "(...) an accumulation of patient, carefully contextualized, investigative projects on fertility change in specific communities, where the form that fertility change takes is not judged in advance... Only such studies as these can do justice to the variety of changing fertility behaviours in

any community and can examine the ways in which economic and political forces of change are mediated by local, cultural, and institutional forms..." (1993: 692)[33].

The problem is that these divergent propositions may be accepted to a different degree and in a variety of ways by the members of different disciplinary cultures[34]. There is no doubt that among the opponents of the Princeton view to whom I referred in earlier paragraphs, significant differences in epistemological orientation exist and may play a decisive role in choosing further research directions. While both the members of the European Fertility Project, and David's, Anderton's, Galloway's and Guinnane's research teams may be considered as adherents of social science methodology (with a strong inclination toward quantification, statistical modelling and hypotheses testing), the others take conspiciously different positions. Szreter, for example, describing his collaborative project with Fisher, referred to "inductive, anthropological, and historical research", "highly qualitative and closely allied to anthropology", and "more ethnographic and microcosmic look" (Szreter, Nye and van Poppel 2003: 152-153)[35].

This diversity of epistemological outlook among the critics of the Princeton scientific tradition may pose certain limits on cross-disciplinary transfers of methods and modes of explanation among them and further increase the existing proliferation of discourses. If historians and anthropologists take further steps in inventing their own versions of demographic studies[36], then a further shift toward particularistic explanations will become inevitable, and the further we will move from the chance of reaching a general methodological consensus. What we would then witness would be hundreds of monographs telling hundreds of different and separate stories about how fertility changed. It remains an open question whether these divergent discourses are likely to be integrated again into a new, unified and coherent methodological strain of research. Personally, I doubt it. The proliferation of discourses will likely become the most

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[33] However, in a general accordance with Szreter's account, S. Greenhalgh did not bar the possibility of attaining some level of generalized knowledge when she wrote that "once enough cases are collected and understood, they might serve as building blocks of more general understandings of reproductive dynamics" (Greenhalgh 1995b: 17).

[34] The problem of "disciplinary culture" in relation to demographic studies of fertility has been introduced by S. Greenhalgh (1997). See also Riley and McCarthy 2003.

[35] In his recent collaborative project, Szreter referred to the "critical reflexive demography". See Szreter, Sholkamy and Dharmalingam 2004.

[36] Among historians, it was the recognition that "demography is too important to be left to the demographers" that gave a strong stimulus toward their increasing interest in fertility revolution (Gillis, Tilly and Levine 1992: 3). Within the field of anthropological demography, Greenhalgh called for "not to reinvent the field of demography, but to create a different kind of demography, one better suited to the anthropological enterprise" (Greenhalgh 1995a: xiv). Riley and McCarthy (2003) have recently introduced a postmodernist project of demography.

serious threat to the disciplinary identity of the future historical demographic studies of fertility[37].

Meanwhile, an admiration for the discrete charm of diversity in the past demographic landscape and in all the narratives about it may continue to be a most absorbing enterprise. It also allows us to relinquish an idea that there was a time when science was to discover the principles that explain complex patterns of reality.

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[37] See my scenario for the future development of demographic studies in Szoltysek 2006.

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