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Research Article

Socioeconomic status and fertility before, during, and after the demographic transition: An introduction

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This publication is part of the Special Collection on "Socioeconomic status and fertility before, during and after the demographic transition", organized by Guest Editors Martin Dribe, Michel Oris, and Lucia Pozzi.

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Abstract

BACKGROUND
Despite a long interest in the historical fertility transition, there is still a lack of knowledge about disaggregated patterns that could help us understand the mechanisms behind the transition. In previous research the widely held view is that there was a change in the association between social status and fertility in conjunction with the fertility transition, implying that fertility went from being positively connected to social status (higher status was connected with higher fertility) to being negatively associated with fertility.

OBJECTIVE
The aim of this collection is to study socioeconomic patterns in the fertility transition in a variety of contexts using similar approaches and measures of socioeconomic status.

METHOD
All contributions use different kinds of micro-level socioeconomic and demographic data and statistical models in the analysis. Data either come from census-like records or population registers.

CONCLUSIONS
There is no consistent evidence for the hypothesis that socioeconomic status was positively related to fertility before the demographic transition. While such a correlation was clearly present in some contexts it was clearly not in others. There is more support for the idea that the upper and middle classes acted as forerunners in the transition, while farmers especially were late to change their fertility behavior. It is also evident

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that both parity-specific stopping and prolonged birth intervals (spacing) were important in the fertility transition.

1. Introduction

This special collection is devoted to the interplay between socioeconomic status and fertility, and this type of study requires a long historical and comparative perspective, analyzing this complex issue using different types of micro-level data. In the literature there is a widely held view that the association between social status and fertility changed in conjunction with the fertility transition. This view holds that fertility changed from being positively connected to social status (higher status was connected with higher fertility) to being negatively associated with social status (higher status became connected to low fertility) (see Clark and Cummins 2009; Clark and Hamilton 2006; Skirbekk 2008). In a global context, Myrskylä, Kohler, and Billari (2009) found this type of reversal of fertility differentials at higher levels of economic and social development, measured by the Human Development Index (HDI), but their results were recently questioned based on revised estimates of the HDI (Harttgen and Vollmer 2014).

What the literature has lacked is systematic empirical investigations using comparable measures of socioeconomic status, where these differentials can be studied at the micro level with data covering the entire fertility transition. It was to collect empirical studies of this type that a workshop was organized in Alghero, Sardinia (Italy) in September 2012 on the theme "Socioeconomic status and fertility before, during and after the demographic transition". The workshop was organized by the IUSSP panel for Historical Demography, chaired by Michel Oris and by the Italian Society of Historical Demography. Lucia Pozzi, member of the former and president of the latter, and her team were great hosts in the magnificent setting of the old Catalan town. Martin Dribe completed the team and acted as the scientific leader. This special collection presents a selection of revised contributions from the Alghero workshop. All papers deal in different ways with the complex association between socioeconomic status and fertility, and most contributions make use of an identical occupational class scheme, HISCLASS, to facilitate comparison of the results (see Van Leeuwen and Maas 2011). In turn, this class scheme requires pre-coding of all occupational titles in the Historical International Standard Classification of Occupations (HISCO; see Van Leeuwen, Maas and Miles 2002).

2. Survey of the field and theoretical foundations

Across the western world there were dramatic changes in family life around the turn of the twentieth century. Following a sustained increase in human longevity, family size more than halved during the great fertility decline (e.g., Coale and Watkins 1986). These changes during the demographic transition had a profound impact not only on the lives of ordinary people but, according to one theory, also on the transition to modern (sustained) economic growth (Galor 2011). Nevertheless, it is clear that the demographic revolution of the nineteenth and early twentieth centuries was as important to humanity as the Neolithic and industrial revolutions. Despite this importance, as was noted in a recent survey by Guinnane (2011), we still lack a clear understanding of this process and of which were the important mechanisms producing this change. There are a number of theories focusing on the greater importance of education, women's relative wages and independence, mortality decline, new attitudes and norms, secularization, and so on, but the empirical picture is much less detailed (e.g., Alter 1992; Guinnane 2011; Hirschman 1994; Schultz 2002).

Indeed, in previous research the main evidence has been collected at aggregate levels (countries or regions), but the results have been inconclusive.[4] While some have stressed the importance of industrialization and urbanization (see, e.g., Brown and Guinnane 2002; Carlsson 1966; Davis 1945; Dribe 2009; Galloway, Hammel and Lee 1994; Notestein 1945), or the previous decline in infant and child mortality (Davis 1945; Dyson 2010; Easterlin 1996: 107-108; Notestein 1945; Reher 1999; Reher and Sanz-Gimeno 2007), others have emphasized ideational change affecting people's attitudes and readiness to limit family size (Cleland and Wilson 1987; Knodel and van de Walle 1979; Lesthaeghe 1977, 1980; Lesthaeghe and Wilson 1986). In addition, combinations of these different approaches are also common in the literature. One example is Simon Szreter, who in his study of the 1911 British census stressed changes in perceived costs of children as a crucial mover behind the fertility transition. This evolution is the product both of changes in real incentives and of new attitudes and norms diffusing geographically and socially (Szreter 1996).

To advance knowledge in this area we need a much better picture of the fertility decline at the micro level. More specifically, in this special collection, rather than cover the whole story of the fertility transition we instead cover one crucial aspect: how socio-economic status affected fertility during the transition and how individual and/or family position in the social stratification filtered other influences on birth control and family

[4] One of the major efforts in this tradition was the European Fertility Project conducted at Princeton University in the 1960s and 1970s (see, e.g., Coale and Watkins 1986). As pointed out by Brown and Guinnane (2007), there were several problems in the empirical design of this project that made it difficult to reach firm conclusions on the importance of socio-economic change for fertility decline.

size. The aim is to substantiate empirically some of the theoretical predictions put forward in the literature.

Swedish sociologist Gösta Carlsson (1966) made the distinction between innovation and adjustment as the main processes or explanations of fertility decline. Although this framework has later been extended and refined in various ways, e.g., in the supply-demand framework developed by Easterlin (1975, 1996), the basic distinction between innovation-based and adjustment-based explanations has survived (see, e.g., Van Bavel 2010). Some authors criticize viewing innovation and adjustment as alternative or competing theories of fertility change and argue for blended models where innovation diffusion takes place in conjunction with structural change affecting the demand for and supply of children (see Cleland 2001; Palloni 2001). In other words, innovation diffusion cannot take place unless there are preferences for lower fertility to begin with. A similar view of fertility change characterizes the Ready-Willing-Able model developed by Coale (1973; see also Lesthaeghe and Vanderhoeft 2001).

The main difference in views then becomes whether such preferences were already common in pre-transitional populations, making them open to innovation, or if the lower demand for children came as a result of factors associated with industrialization (Coale 1973; Easterlin 1975, 1996; Easterlin and Crimmins 1985; see also Lesthaeghe and Vanderhoeft 2001). In the second case, adjustment factors such as new conditions for childbearing and family life encourage families to change their behavior. From an economic perspective the demand for children can be defined as the number of children a couple wants if there are no costs to limit fertility (Easterlin and Crimmins 1985). This demand depends on family income and the cost of children in relation to other goods. Children are assumed to be normal goods, implying that a higher income increases fertility, while a higher relative price of children lowers it. The demand for children is also dependent on preferences for consuming other goods: a higher demand for consumption of other goods lowers the demand for children. From a historical perspective the demand for child quality is often believed to have been driven by economic changes following industrialization and urbanization which made education and other investments in children ever more important (Becker 1981; Galor 2011; Praz 2005; Wahl 1992). Thus, demand for child quality has increased at the expense of child quantity. This helps to explain why fertility does not increase together with rising incomes in the process of modern economic growth. Instead, the decline in fertility has been seen as a crucial part, and sometimes even a root cause, of modern economic growth (Galor 2011; see also Becker, Cinnirella and Woessmann 2010; Guinnane 2011).

The argument is that technological progress during industrialization gradually increased demand for human capital, which in turn led parents to invest more in their children's human capital because they foresaw a greater demand in the future. This

implied a faster rate of economic growth, increased per-capita income, and a reallocation of resources toward the quality of children (Galor 2011). However, the actual importance of human capital and education to workers in the early stages of the British industrialization process has been questioned by several scholars, and similar claims could be made for other contexts (Galor 2011: 30–37; Mitch 1999; Schön 2000). For the later stages of the industrialization process, however, there is little question of the importance of education to economic growth (see, e.g., Abramovitz and David 1973; Goldin and Katz 1998). On the other hand, Mokyr (2002, 2009) has argued strongly for the large role played by (useful) knowledge in a more general sense in bringing about the innovations of the industrial revolution, which is connected more to the relatively few inventors and innovators than to the workforce at large. Regardless of its actual importance to economic growth, however, we would expect the number of children in a family to be negatively related to the level of investment in their education, as longer schooling was associated with direct costs related to going to school (material, clothes etc.), as well as to the possible indirect costs of lower family revenue from the children's labor contribution.

The supply of children can be defined as the number of surviving children a couple has if they make no conscious effort to limit the size of their family (Easterlin and Crimmins 1985). Thus supply reflects natural fertility as well as child survival. High child mortality is clearly another important element, because it constitutes a limit on this potential supply. Cultural factors outside the immediate control of the family that influence the level of natural fertility, such as breastfeeding practices, might also impose such a limit. Declining mortality in the first phase of the demographic transition changed the supply of children: this was one important factor in the fertility decline (e.g., Galloway, Lee and Hammel 1998; Oris 1995; Reher 1999; Reher and Sanz-Gimeno 2007; see also Dyson 2010). However, the magnitude of the mortality decline was much smaller than the decline in fertility, implying that mortality could only have been one of several important determinants of fertility decline (cf. Haines 1998). Moreover, there was often a long time lag between the beginnings of the mortality and fertility declines, sometimes as much as 100 years, making it even more unlikely that mortality decline was a sufficient cause of fertility decline (Bengtsson and Ohlsson 1994; Perrenoud and Bourdelais 1998).

Taken together, the economic, demographic, and social changes following agricultural modernization, and later also industrialization and urbanization processes, created new conditions for both working and family life. These changes included, for instance, the expansion of wage labor outside the home, the increased importance of education, higher proportions of people living and working in urban areas, less use of children in household production, and better child survival, which led families to adjust their target family size (Schumacher 2010).

At the same time, a popular view in historical demography since the days of the European Fertility Project has been that fertility in pre-transitional society was not deliberately controlled, but 'natural' (Henry 1961). Natural fertility in this sense is, however, not the same as the absence of deliberate fertility control, as has been shown by the existence of deliberate spacing in times of economic stress long before the fertility transition (Bengtsson and Dribe 2006; Dribe and Scalone 2010). In fact, fertility was not considered to have been within "the calculus of conscious choice" (Coale 1973), and the main explanation behind the fertility transition was families innovating to adjust fertility within marriage to economic circumstances (Coale and Watkins 1986). Consequently, women stopped childbearing after having reached a certain target family size: in other words, the control was parity-specific. Subsequent studies, however, have also stressed the importance of longer birth intervals (spacing) in the transition (see, e.g., Bean, Mineau and Anderton 1990; Crafts 1989; David and Sanderson 1986; Oris 1995; Szreter 1996). According to this view, fertility decline was not so much a response to changing economic and demographic conditions as to the diffusion of new ideas and attitudes about birth control, to a large extent related to broader value changes; for example, secularization, which came about in the period of modernization (e.g., Casterline 2001; Cleland 2001; Cleland and Wilson 1987; Lesthaeghe 1977; Lesthaeghe and Vanderhoeft 2001; Oris 1995). In the model of Easterlin and Crimmins (1985) this type of change affected the costs of fertility regulation, which can be defined as the direct monetary costs and the psychic costs of regulating fertility. New, more positive attitudes toward fertility control among broader segments of the population lowered these costs.

In this way, fertility decline can be considered the result of both adjustment of behavior to new socio-economic circumstances, and innovation in the form of new attitudes and values, lowering the costs of fertility control. We expect different socio-economic groups to have been differently affected by both innovation and adjustment. We expect the middle classes to have been affected first by changes in adjustment because they engaged in more skilled occupations where returns to education should have increased first; thus, the quantity-quality trade-off should have set in earlier. On the other hand, we believe that cultural change affecting attitudes, secularization, etc., originated in the upper classes, gradually diffused to the middle classes, and then to the working class (Frykman and Löfgren 1987; Lesthaeghe and Surkyn 1988; Livi-Bacci 1986; Shorter 1975; Van de Putte 2007). This position is in line with Rogers' classic theory of innovation diffusion, in which innovations are thought to diffuse through social systems and where the likelihood of adopting new ideas is positively associated with socioeconomic status. Early adopters are usually found in the higher-status groups, while low socioeconomic status is associated with being a late adopter of innovation (Rogers 2003 [1962]).

3. Summary of papers

Martin Dribe and *Francesco Scalone* have looked at the long-term development of socioeconomic fertility differentials in Sweden using micro-level data from five complete count censuses in Sweden from 1880-1970. Each census contains information for 5-8 million individuals, allowing for a very detailed picture of socioeconomic status and fertility. Fertility is measured indirectly by child-woman ratios; these indicate net-fertility (surviving children aged 0-4). A careful sensitivity analysis shows that these measures are robust to socioeconomic differentials in infant and child mortality. Their results are not fully consistent with the widely held view that the direction of social-status differences in fertility changed during the transition from higher status being connected to high fertility to higher status being connected to low fertility. They find no indication that elite groups had higher net-fertility than other social groups immediately before the fertility transition. Instead, most evidence seems to suggest that fertility differentials were smaller before than they were during or after the transition.

In the early phase of the transition the upper and middle classes had much lower net-fertility than lower-skilled workers, but there was no clear gradient from highest to lowest socioeconomic status. In the 1960s, well after the end of the fertility transition, the middle class had the lowest levels of fertility, while the elite, farmers, and rural laborers had the highest. The low fertility of the upper classes in the early phases of the transition is consistent with explanations focusing both on adjustment of fertility to new socioeconomic circumstances and on diffusion of new attitudes toward birth control and ideal number of children. The fact that in 1880 the elite (the highest group comprising approximately 3% of the population) had lower fertility than other groups and that in 1890-1900 it was the upper-middle class (lower managers and professionals) that had the lowest fertility may be taken as an indication of the importance of innovation-diffusion factors, as economic adjustment would not have been a major factor in elite group fertility, as they experienced both low opportunity costs of child bearing (low female labor force participation) and a high material standard of living, allowing both spacious housing and domestic servants. It may well have been the case that new attitudes to birth control developed and spread through society, first affecting the behavior of the most affluent groups and then after some delay the middle classes. After the transition the low fertility of the middle class is clearly consistent with a trade-off between quantity and quality of children.

Looking at a geographically confined area in southern Sweden, *Tommy Bengtsson* and *Martin Dribe* analyze fertility differentials by social class using longitudinal micro-level data from the Scanian Economic-Demographic Database (SEDD) encompassing the entire fertility transition as well as approximately 60 years of pre-transitional fertility. They show that the fertility transition involved not only parity-specific

stopping but also prolonged birth intervals, implying that more-recently married couples also controlled fertility. The interval between marriage and first birth was initially shorter for lower socioeconomic strata, implying that marriage and first-birth decisions were tightly interlinked in this group. While elite and middle class families had higher fertility prior to the fertility transition, it was already declining in the 1880s, earlier than in lower status groups, and also declined more consistently. Skilled laborers and farmers followed in succeeding decades, and low-skilled and unskilled laborers followed a few decades later still. Thus, while fertility initially diverged in absolute terms by socioeconomic status, it converged somewhat at the end of the transition. In relative terms, however, a similar convergence did not take place, especially not for higher-order births. The elite group and middle class were the first to start to limit their fertility, followed by skilled workers and farmers, and finally unskilled workers.

These socioeconomic patterns of the fertility transition do not appear immediately consistent with several of the major explanations put forward in the literature, such as the decline of infant and child mortality, increased female labor force participation, and a quantity-quality tradeoff. Although the latter two may have started to play more of a role in the later stages of the transition it was not until the post-transitional period that they became really important, when the educational system and married women's labor force participation really expanded. Mortality decline, on the other hand, might have been of some importance to the overall fertility decline, but cannot explain much of the SES-specific pattern. The socioeconomic pattern observed is, however, consistent with an innovation process where new ideas and attitudes about family limitation spread from the elite to other social groups. Whether this really was the explanation for the pattern observed is, of course, impossible to ascertain, but there is clearly no reason to rule it out. The high benefits and comparatively low costs of children could also help to explain the lag in the decline among farmers and laborers.

Italy had large regional variations in the start and course of the fertility transition. As is the case for many countries, we know a great deal about these patterns at the aggregate level (e.g., Livi Bacci 1977) but much less about details such as differentials by socioeconomic status, which normally require micro-level data. *Marco Breschi*, *Alessio Fornasin*, and *Matteo Manfredini* provide a careful analysis of the 1961 fertility census in Italy, which gives detailed information about completed fertility for cohorts born before 1912. They look at the development in four different areas with highly diverging trends, focusing special attention on the association between education, occupation, and fertility. They note large disparities in the Italian fertility transition, with some areas being well into their transition by the time of the cohorts born in the late nineteenth century, while other areas show very little change even for cohorts born in approximately 1910, who were of prime childbearing age in 1930-1950. Both

spacing and stopping were at work, with a significant decline in age at last birth of about five years, and increasing inter-birth intervals.

Women's education was a very important determinant of fertility, especially in older cohorts. Already among cohorts born before 1890, women with post-primary education had around two children on average, while illiterate women had around five, and women with only primary education had four children. Clearly, there had been an early fertility decline among the educated, while other women lagged behind. To some extent, however, these differences are explained by urban-rural differences, but, overall, women's education appears a much less important determinant of fertility than socioeconomic status measured by occupational sector. As the labor force participation rate of women born before 1912 was very low in Italy, and socioeconomic status of the husband was controlled for in the analysis, Breschi et al. explain the educational differentials mainly in ideational terms. Educated women might have been more open to new ideas and behaviors concerning family limitation, and might have had a stronger bargaining position in the household. Moreover, they may have been more independent in forming attitudes, for example in relation to religion and the Catholic Church, thereby being early adopters of more secular ideas, which have proven important for fertility decline (e.g., Lesthaeghe and Wilson 1986).

One of the populations studied by Breschi et al. is the town of Alghero on the island of Sardinia. It was distinctive in showing no signs of fertility transition for the cohorts born before 1912. In the paper by *Marco Breschi*, *Massimo Esposito*, *Stanislao Mazzoni*, and *Lucia Pozzi*, a more detailed analysis of fertility in Alghero is presented. The analysis shows a more or less completely pre-transitional situation until the 1930s, with natural fertility in the sense of Henry (1961). It is only among certain sub-groups in the population that a change to lower fertility can be detected. The analysis gives a very good picture of fertility differentials in a pre-transitional population, focusing particularly on socioeconomic differentials.

The results show only small fertility differentials in the pre-transition phase, i.e., before any decline had taken place. While the upper class of non-manual workers had somewhat higher fertility, the difference was very small and not statistically significant. In other words, there is little to no evidence supporting the hypothesis of high fertility among elite populations before the fertility decline. There was, however, a pronounced socioeconomic pattern in the start of the decline. Non-manual workers were forerunners in the transition process, and the cohorts born in 1886-1905 had more than 20% lower fertility than unskilled workers or farmers. The skilled workers followed the upper classes, showing a decline for these cohorts, but still had higher fertility than the upper class. It remains unclear whether these patterns were due to some type of adjustment to new socioeconomic conditions affecting the upper class first, or whether it had more to

do with adopting new attitudes and behaviors imported from other parts of Italy or from elsewhere in Europe.

Thomas Maloney, *Heidi Hanson*, and *Ken Smith* investigate socioeconomic fertility differentials in the frontier state of Utah in the United States. In previous research the fertility transition of the United States has often been viewed as an anomaly, connected to the special character of a country with a moving agricultural frontier and an early fertility decline. Maloney et al. connect to this research using unique micro-level data from the Utah Population Data Base (UPDB), with detailed fertility histories for approximately 50,000 women taken from birth cohorts from the 1850s to the 1910s. While the fertility transition has been studied previously using the same data (Bean, Mineau and Anderton 1990), this is the first study to focus explicitly on the association between social class and fertility.

In Utah all socioeconomic groups took part in the transition, and even though white collar workers lead the decline in several respects the main pattern is still one of considerable simultaneity between groups. When fertility started to decline it was the result of later starting, longer birth intervals, and earlier stopping. In particular, in regard to the delayed starting of fertility measured by age at marriage and length of time between marriage and first birth, white collar families seem to have changed behavior more quickly and earlier than other groups. This change may have been related to longer education and training. Longer inter-birth intervals were also important in the fertility transition of Utah, but there were few noticeable differences across socioeconomic groups in this change. In terms of stopping, it was farm families especially that lagged in the transition, which it seems natural to connect to a higher demand for children on the farms, both as labor and as a source of old-age support.

Taken as a whole, the socioeconomic patterns in fertility in Utah seem to be well in line with standard economic explanations of fertility change, focusing on the demand for children and its relationship to education, labor market, and old age security. This is also the case in much previous scholarship on American fertility, which has focused great attention on the interplay between changing conditions in the farm sector and fertility in relation to migration, land availability, and old age security (e.g., Easterlin 1976; Sundstrom and David 1988). Maloney et al. make a valuable addition to this scholarship by charting how socioeconomic status and fertility interacted in the frontier regions of the United States.

The rural parts of Quebec in Canada showed quite different patterns from those in Utah, as clearly shown in the paper by *Hélène Vézina*, *Danielle Gauvreau*, and *Alain Gagnon*, analyzing fertility patterns in the Saguenay-Lac-St. Jean region. They make use of the unique BALSAC database, which contains a wealth of information from church and civil records covering the period approximately 1830-1970. This paper includes data for approximately 87,000 first marriages. The fertility transition came late

to Quebec compared to regions in Western Europe or the United States. In the region studied it did not start until after 1940 and was still ongoing even as late as the early 1970s. Vézina et al. relate this late transition to the region being both rural and remotely located, with limited influence from cities such as Montreal and Quebec City. Part of the explanation also rests with the fact that the population was largely French Catholic and had a comparatively low level of education. In contrast to the situation in Utah, delayed starting played no role in explaining the fertility transition, which instead was largely a result of parity-specific stopping.

In terms of socioeconomic differentials, the upper/middle class of non-manual workers had lower fertility than the other groups, all of which had similar levels. This pattern is well in line with other parts of Quebec (Gauvreau et al. 2007) and was connected mainly to cultural rather than socioeconomic factors. During the transition, when socioeconomic variables became increasingly important as fertility determinants, the upper classes started to limit family size first, followed by other classes in a more or less hierarchical way, with the exception of farmers who experienced the most delayed transition of all socioeconomic groups. This development led to a widening of socioeconomic differentials during the transition and a convergence toward the end.

In her analysis of the Netherlands, *Hilde Bras* deepens the analysis of how diffusion of new fertility behavior actually took place in the Dutch fertility transition. She focuses special attention on the role of networks in this diffusion process, to shed more light on whether observed fertility differentials by social class might actually be explained by differential access to social networks. She thereby connects her study to more recent developments in fertility theory which have argued for 'blended models', where structural adjustment and innovation diffusion are seen as complementary forces determining fertility decline through social learning processes (e.g., Casterline 2001; Cleland 2001; Palloni 2001; see also Van Bavel 2004; Vanhaute and Matthijs 2007 for empirical evidence). As Bras puts it: "…the engine of demographic change is the structural transformation and diffusion is the lubricant." To assess empirically the importance of innovation diffusion, she uses data from the Historical Sample of the Netherlands (HSN) covering approximately 3,000 couples whose reproductive careers span the period 1870-1940. The social network is measured by marriage witnesses, showing with whom the marital couple had contact or wanted to have contact. It also allows distinguishing the importance of lateral kin and age peers vs. vertical, or intergenerational, ties. This could tell us something about diffusion of new fertility behavior, which is assumed to occur more easily in age-homophilous networks of lateral connections (see McCray Beier 2003). Similarly, the geographical and occupational distributions of the witnesses are analyzed to gain insight into possible mechanisms in the diffusion process.

The results of the empirical analysis show that there were only small socioeconomic fertility differentials in the Netherlands in the early phases of the transition (1890-1920). The upper and middle classes started to adjust fertility first, followed by other classes; by the last phase of the transition, only the laborers (urban as well as rural) lagged significantly, with higher ages at last birth and more children ever born. The configuration of social networks, as indicated by marriage witnesses, also showed an important association with the adoption of deliberate family limitation. More specifically, couples with more age-homogamous and kin-lateral networks were also more likely to exhibit modern patterns of birth control, i.e., earlier stopping, more spacing, and smaller families. Similarly, more women among the witnesses were connected to modern fertility behavior, which points to the important role played by women in the bargaining over reproduction. Bras interprets these findings as indicating the important role of declining patriarchy, both in terms of parent-child and husband-wife relations, for the diffusion of family limitation.

Thus, Bras' analysis clearly offers support for blended models, and argues quite forcefully that both structural adjustment and innovation diffusion played an important role in the adoption of modern fertility behavior in the Netherlands. Although the analysis is not able to distinguish causal effects, it seems likely that both sets of factors were crucial in explaining the transition, and hence that the effect of social networks on fertility was not a simple by-product of social class or urban residence. Instead, both a different cost-benefit calculation and shifting patterns of sociability following a decline of patriarchy contributed to this process.

Jan van Bavel looks at fertility development after the fertility transition in conjunction with the so-called baby boom in Belgium. More specifically, Van Bavel studies educational differences and relates them to a range of different fertility measures. Before the baby boom, i.e., in the period immediately following the fertility transition, there were substantial fertility differences by woman's education. Highly educated women (having a post-secondary educational degree) born at the very beginning of the twentieth century only had about one child on average, while the low educated (lower secondary degree or less) had around two children. During the peak of the baby boom (cohorts born in the early 1930s) the difference between the two groups was less than half a child. While all educational groups showed increasing fertility, the highly educated women increased their fertility the most. It is clear that an important explanation for this is declining childlessness, especially among educated women. Age at first birth and age at first marriage declined in a similar fashion in all educational groups, leaving differences across educational levels more or less unchanged.

These patterns point to a changing educational selectivity in fertility in the period of the baby boom. In the early years of the twentieth century, when higher education was very uncommon for women, there was a pronounced trade-off between education

and labor force participation on the one hand, and family formation and fertility on the other. In other words, when education was highly exclusive, there was a clear over-representation of women who were less interested in family formation and fertility and who gave priority to educational attainment. It could also be that they were constrained by social norms of respectability (Oris 2009), but as educational enrollment expanded this selection force became weaker and an increasing number of family-prone women enrolled in education, which led to declining educational differentials in fertility.

4. Concluding remarks

It is not by chance that a great deal of research on the fertility decline has been based on aggregated data. The problem is finding good micro-level data covering large geographic areas that can provide both a detailed and a general picture of the fertility decline and its determinants. The papers included in this special collection, dealing with Alghero, Scania, Utah, Quebec, and the Netherlands, are founded on instances of this type of long-term collective effort which resulted in population registers. If such data sources are well suited to our ambitions, the wealth of census-like data sources have been more recently reassessed (Ruggles 2014), and recently anonymized individual and household census sheets have been made available at the local or national level.

The eight contributions brought together here enrich previous research by systematically questioning the socioeconomic and/or educational differentials in fertility before, during, and after the transition. As stated above, the common view is that before the transformation of demographic behavior wealthy people had higher fertility and greater reproductive success. Gregory Clark's book *A Farewell to Alms* (2007) gave new popularity to this idea of "the survival of the richest". However, the empirical evidence is mixed, and does not show a coherent pattern. In several cases, pre-transitional socioeconomic differentials in fertility are non-existent or small, and statistically insignificant. On the other hand, higher fertility in the upper classes is observed in Scania before 1880 and a few other studies have made similar findings (e.g., Sangoi 1985). In the East Belgian countryside the apparent advantage of the wealthy was the result of the lower fertility of day laborers, attributed to bad nutritional status affecting women's fecundity and making them more sensitive to short-term economic stresses (Alter, Neven and Oris 2010; Neven 2003). Whatever the causes, the available evidence for Asia consistently shows higher fertility of the upper class (Tsuya et al. 2010), but in Europe and North America it was definitely not a general pattern.

A related question is regarding the knowledge of birth control, or at least the importance of human agency, before the transition. Much remains to be performed in this area, but recent innovative analyses support this hypothesis (Bengtsson and Dribe

2006; Tsuya et al. 2010; Van Bavel 2010). It changes slightly the question about practices used during the transition. Once again, there is a widely shared view that parity-specific stopping was the main driver of the fertility decline. Although this is confirmed in Quebec, other contributions regarding this issue show that both stopping and spacing acted together. Spacing has often been associated with female agency and/or a concern for the mother's wellbeing both in historical Western populations (Oris 1995) and in the developing south (Van de Walle and Van de Walle 1989). Both in the Italian context and in the Netherlands, indications of an impact of female bargaining power on reproduction within couples suggest ideational changes arising first in the most open groups of the population.

The interpretation of the transition in terms of cultural diffusion has more often been supported (although not proven) by the observation of a gradual diffusion of birth control practices across socioeconomic structures from the top to the bottom. The empirical results accumulated in this special collection consistently confirm that the upper classes were forerunners in the decrease of family size. A top-down chronology suggesting a social diffusion is by far the most prevalent pattern. However, all groups below the elite in Utah followed simultaneously, while the process in Quebec followed the social hierarchy, except for the farmers, who were laggards. Farmers are known to be a very heterogeneous group with internal diversity and important contextual effects (Van Bavel 2010). Their resistance to change has been observed in other settings, but once again we see here that this is not a general pattern. Moreover, some authors have claimed that a late transition could reflect not a traditional attitude but rather a successful adaptation to economic and demographic changes (Alter, Oris and Neven 2010).

Interrelationships with other variables are fascinating complements to this already multifaceted and complex picture. In Italy during the first part of the 20th century, female education was more important than male socioeconomic status. In Belgium, highly educated women had much lower fertility before the baby boom of the mid-century, but during the baby boom the gap decreased as the selection effect weakened when education enrolment expanded. In studies of fertility transition, expansion of education is often discussed as a provider of resources in terms of knowledge and openness, but it could also be an explanation for the formation of a shared culture. When school attendance rose, culture was not only formed and transmitted across generations within family and community contexts, but also in school classes through lessons structured in nation-wide programs that spread the visions and morals of the political and socioeconomic elites across wide territories. This process created generations in the sense defined by Mannheim (1928): generations who not only went through the course of life together but also shared a common culture. The formation of such generational cultures among young, well-educated people could help to explain the

kin-lateral impact on fertility behavior observed in the Netherlands, and also justify the interpretation that it indicates a contestation of patriarchy.

As always, the set of contributions presented in this special collection provides several results and raises some new questions. Because it is obvious that the fertility transition happened across Europe and North America during a limited time span, this process calls for some general explanation. However, a global explanation must also be compatible with the existence of a variety of situations before the transition, and a multiplicity of pathways to change during the transition. We stressed here that socioeconomic stratification can be used as a filter. Promising paths for future research include a deepening of our understanding of interaction effects with education and of the constitution of generational cultures.

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