

**Report of the British Society for Population Studies and Max Planck Institute for Demographic Research workshop**

**‘Fertility declines in the past, present and future: what we don’t know and what we need to know’**

**University of Cambridge 15-17<sup>th</sup> July 2009**

The aim of this meeting was to gather an inter-disciplinary and international group of researchers to discuss what is known about fertility decline, what remains unknown, and how might the unknown become known and better understood. Speakers, discussants and participants were chosen to span the different ‘strands’ of fertility decline research, historical, contemporary developed and contemporary developing, and the different disciplines working on this problem, including demographers, economists, evolutionary biologists and anthropologists. The workshop was attended by 60 active researchers in the field of fertility research, who listened to 17 papers; 9 discussants added their comments to the proceedings. The organisers, **Eilidh Garrett**, **Rebecca Sear** and **Mikolaj Szoltysek** would like to extend their grateful thanks to the sponsors of this meeting, the *British Society for Population Studies*, **Joshua Goldstein** and the *Max Planck Institute for Demographic Research*, the *Cambridge Group for the History of Population and Social Structure* and the *Galton Institute*; to **Anne Shepherd**, **Alison Harvey** and **Brigit Moeller** for their invaluable administrative support; and to **Richard Smith** for hosting the conference in the Department of Geography, University of Cambridge.

By way of introduction **Mikolaj Szoltysek** set out the reasons why he believed a more reasoned theoretical structure was necessary for fertility declines past, present and future, in effect the *raison d’être* of the conference. The key debate, that would run through out the following presentations and discussions was established here; whether there is greater utility in academic endeavour working towards a general theory and framework within which all fertility declines can be located, or in rejecting this approach to focus more on detailed specific declines with their own unique sub-narratives.

**Dirk van de Kaa** opened the first session with his paper on ‘Demographic transitions’. He made two key arguments. First, there does not appear to have been just a single demographic ‘revolution.’ Indeed the phrase ‘revolution’ is misleading, implying a transition from one period of stability and equilibrium to another. Fertility change is perhaps best seen as a continual process of change, within which there have been two fairly discrete components: the First Demographic Transition (FDT) and the Second Demographic Transition (SDT). Secondly, he argued that it is necessary to maintain an overarching demographic perspective so that if research focuses just on at the middle-range demographic processes of fertility, mortality or migration, this may well produce a misleading picture.

**Simon Szreter**’s paper on ‘Questions, questions, questions! The expanding universe of research on fertility declines’ argued that a broad theoretical framework was not needed. It further argued that a general theory of fertility has been a ‘teleological drug’ with substantial intellectual opportunity costs. Instead of searching for a general theory, research should be conducted acknowledging the three principles of the historical method: i) difference, both within the past and between the past and the present ii) context and iii) process. Whilst data has been most easily collected at the level of national and sub-national administrative units, Szreter considered ‘communication communities’ to be more important social units. In the

discussion which followed it was noted that one reason a teleological general theory has been so 'addictive' to researchers is that the audience for their arguments is often comprised of policy makers and a more simplistic overview resonates well within an action-oriented policy world. However, arguments were set out that whilst there always remains some variance at the different stages of the fertility transition broadly there is still a transition between high and low fertility states so some generalisation remains possible.

**Bob Woods**, as discussant of Szreter's paper, noted that an important consideration was that the debate on holding a general theory does not reflect an epistemological crisis and should be seen as a sign of strength of the discipline. He reiterated scepticism that the SDT is of equivalent magnitude to the FDT and argued that the term 'transition' may become devalued if it is used in the former context as, while the plausibility of the changes wrought during the FDT being reversed remains extremely improbable, the same cannot be said of the changes associated with the SDT, such as below replacement fertility.

**Sebastian Klüsener** began the second session by presenting a paper co-authored with Joshua Goldstein entitled 'Culture strikes back: a geographic analysis of fertility decline in Prussia'. This presentation suggested that the basic conflict concerning a general theory of fertility decline has been between cultural diffusionists and economists. From a geographical perspective the cultural diffusion explanation of changes in fertility behaviour across space seems to be more effective. The authors had used a panel model in combination with Ordinary Least Squares approaches, to look at changes in variables, rather than at absolute values, taking their data from historic Prussia. The results broadly supported the cultural diffusion hypothesis, indicating that hotspots of decline in regional centres led the transition to lower fertility, with slower rates of change occurring in peripheral rural and Catholic administrative units.

In the question and answer session which followed an analogy was drawn between the cultural diffusionist view of changing fertility and an incoming tide. This highlighted, first, the underlying difficulty of measuring the broader 'tide' from observations of individual waves and, second, the difficulty of explaining the underlying causal process from simple observations at the surface level. A particular problem for those wishing to use a cultural diffusion model is the lack of acceptable data. While economic variables, which can be more robustly measured, can be controlled, a potentially major assumption may be made that the unobserved residuals can simply be attributed to cultural processes. For example it was noted that in the UK fertility change spread out in a similar fashion from both London and Lancashire, yet there were significant differences in the process and context between the two areas.

**Neil Cummins** and **Greg Clarke** then jointly presented their work 'Malthus to modernity: England's first fertility transition, 1760-1800'. From a historical perspective, they argued, there were two main events: the industrial revolution and the demographic transition, but the interaction between the two has perhaps not been sufficiently appreciated to date. Using data collected from 7,000 historic wills in south eastern England, it was noted that prior to 1770 those with greater assets had higher fertility but afterwards the fertility advantage of the rich was lost and there was a systematic reduction of the fertility of the richer strata of society. The timing of the change suggests the influence of factors associated with the industrial revolution. However further analysis of this data, to establish what drove the decline in the fertility of the rich, has proven to be inconclusive with regards to income, child survival and quality / quantity trade-off hypotheses.

As this session's discussant, **Stephan Warg** highlighted that changes in both cultural and economic domains would be important as innovation of cultural values would in part be determined by the socio-economic context. The difference between cultural and economic theories of fertility decline may be seen from the perspective of individual innovation or adaptation. The suddenness of the changes around 1800 might suggest that the cultural response to the economic changes occurring at that time was actually influenced by the intellectual ideas of Malthus. Evidence of the dissemination of his theories suggests, however, that this is actually extremely unlikely to have been the case.

The second day of the conference was opened by a joint presentation from **Frans van Poppel** and **David Reher**. They discussed recent analyses of historic demographic trends in Spain and the Netherlands during the 19<sup>th</sup> and 20<sup>th</sup> century. Using linked reproductive histories from both regions, fertility trends were analysed at the individual rather than at the aggregate population level. The role of child survival as a stimulus for reproductive change, the use of stopping and spacing strategies to achieve reproductive goals, and the timing of change were all discussed. Most importantly, these analyses demonstrated strong evidence for replacement fertility, with child deaths associated with an elevated likelihood of later births. In this light, fertility limitation is seen as strategy to protect families from the effects of increases in child survival. Following the presentation of these analyses, Reher provided further discussion of the implications of this research for demographic transition theory; arguing for the central importance of mortality declines as a precursor to fertility reduction and the persistence of small desired family size throughout European history.

Their discussant, **Chris Wilson**, praised the use of longitudinal micro-data in the comparative analysis of Spanish and Dutch fertility trends. He noted a general agreement with their interpretations, and reinforced the call for further research linking childhood mortality to individual fertility patterns in historical demography. It was also stressed that future studies should strive to test competing hypotheses for the precursor of fertility decline with the same data – arguing that the central importance of any factor ultimately can only rest upon the exclusion of rival hypotheses. Wider discussion considered the need for demography to move beyond its focus on central tendencies in population data and into the study of the intra-population diversity in fertility histories.

The late morning session focused on evolutionary approaches to fertility with presentations from **Lesley Newson** and **Ruth Mace**. Both provided a brief overview of evolutionary models of human behavioural diversity with specific regard to variation in human reproductive strategies. It was argued that the rich theoretical nature of this literature has much to offer population scientists focusing on fertility trends, whether their focus is historical, contemporary developing or contemporary developed populations. Newson then outlined the 'kin-influence hypothesis' for demographic transition; arguing that fertility decline is set in motion by the dissolution of extended-kin networks associated with modernisation, leading to a gradual erosion of pro-natal norms in favour of alternative social rewards. Evidence from role-play experiments were used to support this model; showing that individuals playing the role of friends rather than kin were less likely to offer favourable advice about reproduction. Ruth Mace then provided an empirical test of the influence of kin on the decision to use contraception in rural Gambia. In this case, fertility histories indicate that contraception is used primarily as a tool to schedule births, rather than to reduce the chance of conception. When controlling for individual socio-demographic factors, there was

little evidence that kin directly influence contraceptive uptake, either by their absence/presence or by acting as models for social learning.

Discussion of these papers was led by **Sarah Walters**. She further underlined the potential for evolutionary models of fertility to contribute new theories and methodologies to the study of demographic transition. In particular, the non-teleological and broad comparative study of fertility patterns adopted by this approach was commended. Walters then outlined the need to tie together the ‘big narratives’ of demographic transition, such as the kin-influence hypothesis, with the intricate ‘sub-plots’ of regional fertility trends, which in extreme cases can eclipse the anticipated effects of local social or economic shifts. Wider debate focused on the utility of evolutionary models and how they should be integrated with traditional demographic perspectives.

Sessions five and six of the conference moved further into the worlds of contemporary changes in fertility and the ideas that underpin our understanding of it. **Christine Oppong** kicked off proceedings with a paper entitled “Parental Perceptions of Child Costs”. Based on her extensive ethnographic studies in Ghana in the 1960s and 1970s, Oppong proposed that the behaviour in fertility control displayed by educated subgroups might be regarded as innovative, particularly when such behaviour is situated within its gendered context and given the desire of parents to provide the best for any future children. From a more methodological perspective, she argued that multi-method, small scale studies could be partly constitutive of a broader way of understanding family planning and fertility choices amongst couples, stressing the parallels with Simon Szreter’s much-mentioned “communication communities”. **Ian Timaeus’** contribution continued the theoretical thrust of the session, taking particular issue with the popular classification of signs of fertility transition into stopping and spacing behaviour. His suggestion was that we think rather of “postponement”, as a means of understanding the flexibility of couples’ intentions as well as the unpredictability with which circumstances can change. Far from being a mere matter of semantics, such an amendment to the concept of ‘spacing’ provided a real means of understanding fertility decline.

Both papers met with a broadly appreciative response, and the discussant, **Tim Dyson**, was keen to highlight a point both presenters had made: that the African experience of fertility was distinctly different, and that scholars of this subject would benefit from the overt reintroduction of the ideas of Jack Goody into their work. Dyson’s comments proved as provocative as the papers in some regards, sparking an intriguing discussion about the relationship of mortality decline to the fertility transition and the extent to which England and Wales fitted the pattern of a mortality fall preceding a decline in fertility.

Session six saw **Geoffrey McNicoll** and **Arland Thornton** take up the challenge of the conference title in somewhat differing manners. McNicoll was keen to highlight the links between policy and the encouragement of the fertility transition in developing countries. He identified four “legacies” of these efforts. These were: the responsiveness of the family unit, the organisation of communities at a local level, agency (in particular the relative power of women within institutional arrangements), and the actions of governments and authorities. He regarded these as common to fertility transitions globally, achieved in much of the developing world through already-prevalent institutional and cultural entities. Thornton also assessed the global nature of aspects of the fertility transition, with regard to the spread of developmental idealism. This was defined as a certain worldview, akin to the Fukayaman notion of western liberal democracies having reached the end of history, via a path which

other nations would inevitably follow. This made it possible to look elsewhere in the world and see how Europe used to be, a process of “reading history sideways”. Such an ideological position comes with certain ethical problems, but Thornton chose to highlight how widespread certain values associated with fertility and modernity were in a geographically and economically disparate selection of nations, drawing from his surveys the conclusion that such changes were viewed as positive by respondents. The discussant **Laura Bernardi** took up a number of these themes of complex change, and the way in which community transmits change, calling also for a consideration of migration from high fertility areas to those where fertility is now low, and the policy implications that such a population movement would entail.

The final day of the conference was opened by **Maire Ni Bhrolchain**, whose presentation was on ‘Time and measurement in explaining fertility change.’ The pretext for this paper was, she argued, that we (demographers) lack any systematic treatment of time despite its centrality to demographic processes. As demographers we are concerned with establishing causality and this is something that we are not able to do unless we establish a start date for a particular phenomenon. The example cited was that of the baby boom, but there are other numerous examples, such as when did fertility transition begin in any particular country? There is then the question of how we should view demographic change – an approach viewing change as continuous might very well yield different results to a more episodic approach. A successful explanation of any fertility trend requires a proper delineation of fertility in time and also indicators designed to measure fertility as the dependant variable.

The second paper of the session on ‘Where have all the children gone?’, presented by **Mike Murphy**, called into question the validity of survey data. The thrust of this paper was the discovery that in the General Household Survey (GHS) childlessness appeared to be being reported incorrectly. The problem Mike found was that the proportion of women who reported being childless increased as their cohort increased in age. The conclusion Mike came to was that the explanation had to be the conscious concealment of adult children perhaps due to estrangement or boredom with the length of the survey. The implication of this is not good for the use of survey data. If there is a problem with the reporting of fertility then it is hard to be confident in the responses given to more complicated questions.

The discussant **Jan Hoem** commented on Maire’s paper by suggesting that as demographers we should attempt to get at what we are actually looking at and not adjust measures designed for other purposes, and that using individual level data and running hazard regression models is a useful approach; in doing this, he pointed out, it is also possible to contrast cohort and calendar time. He then questioned whether the implication of Mike’s findings could be that we should stop using survey data entirely, but asked what would be left if we were to give up on survey data. The answer given was that registers alone would be left and thus everyone would be forced to analyse Scandinavian countries. Mike’s response was that he was trying to draw attention to the problems with survey data in order that they might be solved. He said that histories must be validated, but they are still absolutely indispensable.

**Tomas Sobotka** followed with a paper on ‘Is the only way down? Many factors behind contemporary very low fertility are likely to be temporary’ in the final session. He argued that there is still a very strong desire for children and that lowest low fertility is far from inevitable. In fact many factors are now likely to increase fertility and the empirical floor may have been reached in the year 2000. As evidence for his optimism Tomas pointed out that the number of people living in a country with a Total Fertility Rate lower than 1.3 has

been going down since 2000 after a year on year increase from zero since 1990. The explanation for this, he argued, is a combination of good economic conditions, immigration from high fertility countries and targeted policy interventions.

**Paul Demeny**, in discussing this paper, said that everyone is already convinced that lowest low fertility is not inevitable. However, “not being inevitable” is not enough to prevent something from occurring in reality. He remarked that the European welfare states are already overextended and in trouble. They will have to make drastic cutbacks soon. Paul argued that the personal answer to this crisis would seem to be the accumulation of assets and not having children.

The final paper of the conference was a joint presentation by **Stuart Basten** and **David Coleman** on ‘The future of reproduction: an interdisciplinary challenge’. They began by outlining the problems demographers face when trying to predict future fertility trends such as the high levels of divergence, increasing levels of childlessness and the decline of the larger family. An important question then identified was ““Why we bother to have children at all?”. In the modern developed world it seems to be a mark of material irrationality to have any children. Several possible explanations for continued childbearing (despite its apparent irrationality) were mooted. There seems to be a biological need to nurture and motherhood appears to be instinctive. These possibilities generated many questions: ‘Will people stop having children?’ ‘Are men actually necessary?’ ‘Is the desire for children fundamental?’ ‘Is one child enough?’ ‘Who will be the parents of tomorrow?’ Basten and Coleman argued that such questions need to be addressed and although they are the type of questions which cannot be answered via traditional demographic forms of enquiry.

To end the conference **Paul Demeny**, in line with David Coleman’s suggestion that we need to think ‘outside the box’, came up with some unusual possibilities. First, he suggested that parenthood could be turned into a profession. Then, in relation to solving the economic problems associated with low fertility he proposed that it might be possible to link pension schemes to fertility or (even more bizarrely) that the value of a person’s vote could be related to life expectancy and that this could be calculated to take children borne into account as well. A further suggestion he offered was that, instead of assuming immigrants would take low skilled, poorly paid jobs, national service could be reintroduced with dispensation only being offered under extraordinary circumstances; such as having a baby.

The organisers would like to end with a vote of thanks to all speakers, discussants, chairs and participants for their varied and highly stimulating contributions. Their hopes for the meeting of bringing a diverse group of people together to engender cross-disciplinary discussion and cross-fertilisation of ideas were certainly fulfilled.

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