

## Fertility & reproductive health abstracts

Strand organisers: Dr. Alina Pelikh, Dr. Alyce Raybould (University College London)

Low fertility sessions convenor: Dr. Bernice Kuang (University of Southampton)

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### 1.30pm Monday 5 September: Determinants of reproductive decision-making

#### **The Drug War, violence, and women's fertility preferences in Mexico**

**Ginevra Floridi, José Manuel Aburto; University of Oxford.**

Exposure to violence can affect individuals' fertility intentions, and realisations. While armed conflict has been found to increase fertility, the effect of exposure to violence on fertility preferences is less studied. Intended fertility may increase with violence exposure due to insurance and replacement mechanisms or decrease due to fear of crime and financial hardship. Since 2006, Mexico experienced an unprecedented surge in drug-related violence caused by a combination of national policies and international influences on drug cartels. This led to a substantial increase in homicides, shootings, and other violent acts, with large variation across municipalities. Evidence suggests that the surge in violence reduced births among specific socio-economic groups, leading to selective fertility. However, no study has examined whether violence exposure led to changes in preferences, which are a determinant of observed birth rates. We link administrative data on monthly homicide rates across Mexican municipalities with individual-level data from the Mexican Family Life Survey (MxFLS) for 8,740 women aged 15-49, collected in the years before and during the surge in violence (2002-2013). Using fixed-effects models, we investigate how changes in violence exposure at the municipal level relate to changes in women's fertility preferences, as measured by the total intended number of children accounting for current parity. We assess heterogeneity by women's education, and test potential mechanisms explaining the relationship, including fear of victimisation and household economic shocks. Preliminary results suggest that intended fertility declined after violence exposure among women, predominantly because of household economic shocks subsequent to the onset of the Drug War.

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#### **Employment status, subjective perception of financial security, and first birth timing: An analysis by education in the United Kingdom**

**Brian Buh; Wittgenstein Centre (IIASA, OeAW, University of Vienna)**

The United Kingdom (UK), previously an outlier in Europe, has seen a decline in the total fertility rate over the last decade. The UK stands out in Europe for its much stronger deregulated and flexible labour market, exposing individuals to market forces. The relatively less generous social welfare system increases social stratification, necessitating full-time employment and the associated income for other life course transitions. We aim to examine how employment status, specifically differentiating between full- and part-time employment, and the perception of one's financial security associates with the likelihood of becoming a parent, stratified by educational attainment. We utilize the Understanding Society survey (2009-2020), which includes fertility and employment histories as well as subjective questions of financial security. We employ a discrete-time event history analysis using the time since the end of education, interacting the explanatory variables with education, and comparing the results before and after considering partnership. We find that part-time employment reduces the likelihood of parenthood for men and high educated women but increases it for medium and low educated women. Self-employment reduces the likelihood for women, but not for men. Surprisingly, perceived worse financial security increased the likelihood of parenthood, especially for men. Adding partnership lowers the predicted probabilities of becoming a parent, but does not change the overall pattern of the explanatory variables.

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## **Pronatalist policies and traditional gender division of domestic labour – possible factors shaping fertility decisions of Polish couples**

**Muter Magda; London School of Economics and Political Science**

This paper explores how pronatalist measures reinforce traditional gender norms and unequal division of domestic labour and therefore contribute to low fertility rates in Poland. Current family policies combined with a low supply of early childcare (especially insufficient numbers of nurseries for children aged 1-3) create great pressure on mothers of young children. What is more, the birth of a child usually results in a more traditional division of labour between partners and at the same time even full-time employed mothers experience fewer possibilities of trainings and promotions. The gender inequalities are produced and reproduced both in the labour market and in households. Some women adjust their fertility intentions downwards due to the experience of double burden (working full-time and being responsible for most of the domestic labour). In recent years, policymakers in Poland have implemented numerous pronatalist policies (with the aim to increase fertility), and despite these efforts fertility remains low. My paper explores possible reasons for this situation. I show how the same pronatalist measures reinforce traditional gender norms and unequal division of labour between partners and how the seemingly gender-neutral social policies can produce strongly gendered uptake. The paper is based mainly on the results of 86 semi-structured individual interviews with 44 couples who have at least one child, conducted in 2019. I present how the pronatalist policies are experienced by my respondents, and I explore the main barriers to parenthood in the institutional context of a post-socialist country.

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## **9.00am Tuesday 6 September: Contraception**

### **Perceptions & knowledge of contraceptive methods: Responding to effectiveness tiers**

**Ellie Dries; Arizona State University / Federal Reserve Board**

I collected survey data from 400 female undergraduate students at Arizona State University to better understand current perceptions of long-acting contraceptive methods, knowledge of effectiveness and response to a visual resource that classified contraceptive methods into tiers by effectiveness. Results show that the visual resource increases knowledge of effectiveness while also increasing self-reported likelihood of using a long-acting method. These findings support the further investigation of how the field's prioritization of preventing unplanned pregnancy has impacted the reproductive autonomy of contraceptive users.

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### **Who should buy emergency contraception? It depends: Exploring knowledge, attitudes, and gendering of emergency contraception among men in Accra, Ghana**

**Joe Strong; London School of Economics**

Emergency contraception (EC) is increasingly a feature of people's contraceptive mix and possesses unique qualities for pregnancy avoidance after sex. EC efficacy is time-sensitive, meaning understanding the barriers to access is critical. This paper uses a mixed-methods approach to understand men's roles in EC. A final sample of 270 men were asked their knowledge, attitudes, and behaviours towards emergency contraception in a novel survey design, which aimed to specifically capture the role of gendered interactions. 37 in-depth interviews were abductively analysed to understand mechanisms behind men's attitudes and behaviours. Regression analyses and abductive coding will be used to interrogate men's roles and the gendering of EC use. Preliminary findings indicate knowledge of emergency contraception was varied, with most men not recognising the term. Men had differing attitudes towards EC acceptability; 67/270 survey respondents indicated it would be acceptable for their partner to use EC, while the largest proportion (n=111) believed a man should purchase EC. Qualitative data suggest that men and women might be "shy" when accessing EC, though many men discussed desiring their partner seek their permission before use. Among men who

reported multiple partners, attitudes and behaviours were not fixed but dependent on the relationship. Early findings illustrate the normative and gendered mechanisms that underpin men's attitudes and behaviours. This research provides important contextual evidence of the interpersonal and community level factors that create the conditions under which people use EC, and offers a lens through which to interrogate conditions that shape access and barriers to EC.

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### **Does unmet need contribute to explaining fertility stalls in sub-Saharan Africa? An analysis in countries with strong evidence of fertility stalls**

**David A. Sánchez-Páez, Bruno Schoumaker; UCLouvain**

Although fertility in sub-Saharan Africa has decreased since the 1980s, it remains at high levels mainly due to the desire for large families, low levels of contraceptive use, and high unmet need for family planning. Even more, since the early 2000s slowdowns, halts and reversals in fertility decline have been observed in many countries. Our goal is to analyze whether unmet need for family planning has contributed to reversals and halts in fertility decline, and whether meeting contraceptive needs would have prevented the emergence of stall periods, specifically in those countries where strong evidence of fertility stalls has been found, i.e., Cameroon, Congo, Kenya, Namibia, Rwanda, Zambia and Zimbabwe. We use the Demographic and Health Surveys to examine trends in unmet need during stall periods and to estimate fertility rates by fertility planning status. Then, we propose four scenarios where we estimate what the fertility levels would be if the unmet needs were satisfied. In the first two scenarios we revisit the usually used measure of Wanted TFR and propose a new measure that places mistimed births at the expected time. In the last two scenarios, we use contraceptive failure to account for rationalization. Our findings suggest that fertility stalls are mainly driven by wanted fertility, especially planned fertility. Reductions in unmet need for family planning would have led to lower fertility levels but would not have necessarily prevented the emergence of stall periods. Scenarios show that it is not only access to contraceptives that is important, but also their correct use.

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### **Any port in a storm? Assessment of the effects of type and brand of condom in safe-sex practices through a field experiment in a hostel in Lima**

**Ignacio Franco Vega; University of Bath**

Objective: To assess the effects of condom types and brands on their use in a free condom distribution intervention in hostales (hourly-rented lodgings for couples) in Lima. Introduction: The rates of unwanted pregnancies and sexually transmitted infections in Peru are high. Contraceptive use remains stagnant at low levels; new policies are needed. Condom availability programs have been successfully used in other countries. Hostales could serve as a distribution point. The last-minute decision of using a condom might be affected by the type and brand provided; its effects should be measured. Previous studies have used self-reported measures to study condom use; this methodology has proved unreliable. New data collection methods are needed. Method: A hostel was used as the setting for a field experiment. Its rooms were divided into seven treatments created by the combinations of different condom brands (Durex, Piel and Generic) and types (Extra-thin, Extra-safe, Textured) and a control group. Clients were randomly assigned to a room where they found a specific free condom. Instead of using self-reported measures, I searched the room for used condoms after the couple left. Results: 423 couples participated. Nominally, all treatments generated an increase in condom use. I found significant differences between the control group and all Piel types and most Durex ones. I found no significant effect from Generic condoms or Durex Extra-thin. Conclusion: Nominally, the provision of any condom increases use. Known brand condoms show a stronger effect than a generic option. No effect from condom type was found.

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## 1.15pm Tuesday 6 September: Reproductive health

### **Choice within abortion care pathways: A critical appraisal of the medical abortion revolution in England and Wales**

**Katy Footman; London School of Economics and Political Science**

Medical abortion is commonly celebrated for revolutionising abortion care across different contexts, for example in England and Wales, through the recent development and permanent approval of telemedicine abortion. As in many countries, medical abortion has largely replaced surgical methods in the UK. However, research has not assessed whether the factors driving this shift towards medical abortion reflect health system barriers or patient preferences. Using mixed methods, this research aimed to critically examine the structural factors behind the growing use of MA in England and Wales, drawing on a multilevel analysis of national abortion statistics and interviews with key informants involved in the provision, management and commissioning of abortion services. Findings suggest that constraints on patient choice have influenced the growing use of MA, primarily due to health system factors. These include a lack of surgical skills in the workforce, infrastructure requirements, service structure, organisational policy and leadership, cost, reliance on the independent sector, and commissioning practices involving under-funding and competition. Patient choice of surgical abortion before 10 weeks in the independent sector and after 10 weeks in the public sector is limited unless patients can inform and advocate for themselves. While the removal of policy restrictions on medical abortion (e.g. allowing home-use) has expanded patient choice, similar policy progress has not been seen for surgical methods. Commissioners and providers must work together to ensure method choice can be reintroduced into abortion services. This study also calls for more nuanced discussion of the potential benefits and impacts of medical abortion.

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### **Adverse pregnancy outcomes in the United Kingdom following unexpected job loss**

**Alessandro Di Nallo<sup>1,2</sup>, Selin Koksai<sup>2</sup>; <sup>1</sup>Dondena Centre for Research on Social Dynamics and Public Policy, <sup>2</sup>Bocconi University**

Research has documented that social and economic context can shape pregnancy experiences. However, there is no evidence on whether an unexpected job loss affects the risk of adverse pregnancy outcomes. We analyse conceptions, partnerships and work histories using Understanding Society to examine whether a woman's and/or her partner's involuntary job loss during a pregnancy increases the risk of miscarriage and non-live birth. Our findings show that risk of non-live birth increases when the woman or the partner are exposed to an unexpected job loss. Moreover, we find higher risk of adverse outcomes following a job loss during the first trimester of pregnancy.

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### **Reductions in early-age fertility and use of family planning and antenatal-care services during the Covid-19 pandemic in Manicaland, Zimbabwe**

**Rebekah Morris<sup>1</sup>, Tawanda Dadirai<sup>2</sup>, Louisa Moorhouse<sup>1</sup>, Phyllis Mandizvidza<sup>2</sup>, Rufu Maswera<sup>2</sup>, Constance Nyamukapa<sup>1,2</sup>, Simon Gregson<sup>1,2</sup>; <sup>1</sup>Imperial College London, <sup>2</sup>Biomedical Research and Training Institute, Harare**

Introduction: Little is known about the impact of Covid-19 and government lockdowns on fertility in sub-Saharan African populations. We investigated whether fertility and use of contraception and antenatal-care services changed between the pre-Covid-19 and Covid-19 periods in Manicaland, Zimbabwe. Methods: Reproductive-age (15-54yrs) women identified in a household census between July 2018-December 2019 were invited to participate in face-to-face interviews. The survey was repeated in March-July 2021, one year into the local Covid-19 outbreak, using telephone interviews. Proportions and 95% confidence intervals were calculated for indicators of fertility and use of reproductive health services. Age- and location-adjusted odds ratios were calculated to measure differences between the two surveys. Results: There was no evidence for changes in overall fertility rates in the Covid-19 period compared to the pre-Covid-19 period. However, there

were lower proportions of young women (15-24yrs) reporting ever having had a birth (35.1% vs. 42.0%; AOR=0.74, 95%CI 0.62-0.87) and a pregnancy in the last year (20.6% vs. 25.6%; AOR=0.78, 0.66-0.92). In young women, the proportions who had started sex (46.2% vs. 55.7%; AOR=0.64, 0.54-0.76) and were married (34.7% vs. 43.2%; AOR=0.69, 0.59-0.81) declined; but, for those who were sexually active, the proportion using contraception also declined (59.8% vs. 65.5%; AOR=0.75, 0.61-0.92). The proportion of women accessing antenatal care within their first trimester reduced (55.1% vs. 83.1%; AOR=0.21, 0.14-0.32). Discussion: Postponements in sexual-debut associated with delayed marriage may have outweighed the effects of lower contraceptive use to reduce fertility in young women at the height of the Covid-19 pandemic in Manicaland, Zimbabwe.

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### **Menstrual pain: A forgotten aspect of sexual and reproductive health and rights**

**Melanie Channon<sup>1</sup>, Mahesh Puri<sup>2</sup>, Emma Fisher<sup>1</sup>, Abbie Jordan<sup>1</sup>, Fran Amery<sup>1</sup>, Jennifer Thomson<sup>1</sup>;**

**<sup>1</sup>University of Bath, <sup>2</sup>CREHPA**

Menstruation is a normal reproductive process, but one that is seen as taboo in many cultures. Menstruation matters – not just to those who experience pain, stigma, and lack of menstrual knowledge and resources but for society as it affects education, and gender equality. Menstruation, especially pain, is notably lacking in the sexual and reproductive health literature. A recent meta-analysis estimated that the prevalence of dysmenorrhea is 71%, but most studies occurred in high-income-countries. 20% missed school, 41% found dysmenorrhea negatively affected performance and concentration, while it was also associated with low-mood, anxiety, and missed social interactions; however, the majority do not seek help for menstrual pain. Using an interdisciplinary, multi-method approach, this paper examines the experience of menstrual pain in Nepal. We ask how common menstrual pain is, what impacts does it have, and how pain is treated. Quantitative and qualitative data was collected in Dailekh district in 2019; 400 adolescent girls were surveyed and 64 women and girls were interviewed as part of focus group discussions. We found that menstrual pain was extremely common and that it impacted attendance at school and work, with 30% of girls having missed school due to period pain in the last month. The most common method of pain relief was drinking hot water and tying a cloth around the waist, but efficacy of these treatments was low. Most people could not afford pain killers and did not think they needed to seek help even if the pain was causing substantial disruption to their lives.

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## **2,45pm Tuesday 6 September: Health, wellbeing and fertility**

### **Implications of rising reproductive-age mortality for fertility in the United States, 2010–2019**

**Antonino Polizzi, Andrea M. Tilstra; Department of Sociology, Leverhulme Centre for Demographic Science, and Nuffield College, University of Oxford**

Recent increases in reproductive-age mortality in the United States (US) imply that fewer women lived to bear children than would be expected had mortality stayed constant. Using data from the Human Mortality Database, the Human Fertility Database, and CDC Wonder, we apply a cohort component projection model with alternative specifications to counterfactually estimate the impact of changes in reproductive-age mortality on fertility in the period 2010–2019. We estimate the change in the number of children born if (1) age-specific fertility rates had remained constant after 2010 and, separately, if (2) mortality had changed under three alternative scenarios: (a) holding reproductive-age mortality constant after 2010; (b) holding reproductive-age mortality constant after 2010 for each of the ten leading causes of death at a given time; (c) holding reproductive-age mortality at European levels after 2010. We find that fertility in the US would have been higher had female mortality between ages 12 and 55 not increased after 2010, particularly death from accidents and suicide. This increase in external-cause mortality has contributed to a worsening of the mortality–fertility nexus in the US compared with similar European countries. However, simultaneous changes

in women's reproductive patterns have had much stronger implications for fertility than changes in mortality. We conclude that estimating the number of births gained or lost—i.e., the number of children (not) born because of changes in reproductive-age mortality—represents a unique indicator that should regularly be monitored by researchers and government officials.

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#### **Health in early adulthood and fertility: a study based on the 1958 British cohort**

**Giammarco Alderotti<sup>1</sup>, Eleanora Trappolini<sup>2</sup>, Alyce Raybould<sup>3</sup>; <sup>1</sup>University of Florence, <sup>2</sup>University of Milan – Bicocca, <sup>3</sup>Centre for Longitudinal Studies, University College London**

Although establishing a link between health and fecundity has been an area of interest in the medical, evolutionary and historical literature, the connection between the two is surprisingly lacking from the study of childbearing in modern day high-income contexts. The COVID-19 pandemic has led to renewed interest into how health both directly and indirectly impacts childbearing. To form a basis for further demographic exploration into the effect of health on fertility, we use data from the 1958 National Child Development Study, and follow participants from young adulthood until age 46 (n= 2,815 women and 3,165 men). Using multinomial logistic regressions, we explore whether self-rated health and BMI in young adulthood are associated with the number of children had, and fulfilment of fertility goals by age 46. We found that worse self-reported health was strongly associated with likelihood of having fewer children and underachieving fertility goals, although this was stronger among men. For BMI, we found that lower BMI for men (relative to a normal BMI) and a higher BMI for women was associated with having fewer children. Women with a higher BMI were also more likely to underachieve their fertility goals. These results remained strongly significant when controlling for relevant confounding factors such as education, home ownership, region, number of siblings, migration background and employment history. Our findings indicate a sizeable association between both more subjective and objective health related measures and fertility outcomes for this cohort, although the mechanisms for their influence are likely to differ.

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#### **Religious, spiritual or neither: Estimating fertility differences by religious and spiritual identification in Britain and the USA**

**Nitzan Peri-Rotem<sup>1</sup>, Vegard Skirbekk<sup>2</sup>, Sarah Wilkins-Laflamme<sup>3</sup>; <sup>1</sup>University of Exeter, <sup>2</sup>Columbia University and the Norwegian Institute of Public Health, <sup>3</sup>University of Waterloo**

The decline in institutionalized religion in Western societies has been accompanied by an increasing prominence of spiritual beliefs and practices. In the United States and Great Britain, over a fifth of the adult population today identifies as spiritual but not religious (SBNR), a term referring to individuals who are concerned with spiritual matters, but choose to pursue them away from organized religion. Nevertheless, the implications of spirituality on fertility behaviour are unknown. As spirituality shares some common features with religious teachings, e.g., assigning lower importance to material goods, adopting self-help strategies etc., it is assumed that SBNRs would have higher fertility compared to those who are neither religious nor spiritual. In this study, we use data from the General Social Survey in the USA and the British Social Attitudes survey from 2018 to explore fertility differences by religious and spiritual identification. Using a child-woman ratio (CWR) based approach, we estimated the total fertility rate for those identifying as religious and spiritual, non-spiritual religious, spiritual but not religious, and neither spiritual nor religious. We found that in both countries, SBNRs had lower fertility compared to religious and spiritual individuals, and higher fertility than those who are neither religious nor spiritual (1.67 vs. 1.93 and 1.44 in Britain, and 1.74 vs 1.87 and 1.12 in the USA). However, in the USA, the fertility of SBNRs is closer to that of religious people (whether spiritual or not). These findings can contribute to a better understanding of the link between secularization and fertility change.

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## **Multi-partner fertility and obesity risk at midlife: Explorative findings from the 1970 British Cohort Study (BCS70).**

**Sebastian Stannard, Ann Berrington, Nisreen Alwan; University of Southampton**

Union dissolution, re-partnering and childbearing across multiple partnerships represent major life events that can have substantial short- and long-term health implications. Yet, the relationships between emergent family dynamics and physical health outcomes have yet to be fully explored. This presentation has two aims. Firstly, I discuss the complexities in understanding multi-partner fertility (MPF) and the implications for how researchers might go about identifying the consequences of MPF. Secondly, exploratory analyses consider the associations between a composite variable incorporating both the number of children and MPF and obesity at midlife. For fathers, no association between number of children-MPF and obesity was observed. For mothers, risks of obesity were higher for those who had one child, those who had two children with two partners and those who had three or more children with two or more partners. Those who had two or more children but all with the same partner had a similarly lower risk of obesity, suggesting that the experience of childbearing with multiple partners may be related to obesity. In fully adjusted models there remained an association between having one child and obesity for mothers. However, all other associations were attenuated when parental and child controls were included, suggesting that family complexity, measured via MPF, is not associated with obesity once selection is controlled for.

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## **5.30pm Tuesday 6 September: Low fertility: Subgroup analyses**

### **The intergenerational effect of low fertility on fertility ideals: Evidence from urban China**

**Shuang Chen; Department of Social Policy, London School of Economics and Political Science**

The emergence of below replacement fertility preferences in post-transitional societies has led some to hypothesise that decline to (very) low fertility in one generation leads to falling family size ideals in the next generation. If true, this mechanism constitutes a self-reinforcing process called 'low-fertility trap' which causes fertility to decline further. This study presents new empirical evidence from urban China testing whether a decline in parents' fertility leads to declines in children's family size ideals. Urban China provides a unique context for two reasons. First, unlike many other post-transitional societies, as period fertility declines to below replacement level in urban China, so has the mean ideal family size. Second, the enforcement of the 'one child' policy in 1980 provides a rare opportunity to estimate the causal effect of declines in family size. Applying a fuzzy regression discontinuity design, the analysis shows that being an only child significantly decreases the ideal family size as well as the probability of desiring two or more children. Findings from this study provide compelling evidence attesting to the 'low-fertility trap' hypothesis and carry important implications for future fertility and fertility policies in both China and beyond.

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### **Educational differences in childbearing by parity: A cross-national comparison of England & Wales, Scotland and Northern Ireland**

**Bernice Kuang<sup>1</sup>, Sarah Christison<sup>2</sup>, Hill Kulu<sup>2</sup>, Ann Berrington<sup>1</sup>; <sup>1</sup>University of Southampton, <sup>2</sup>University of St. Andrews**

Fertility levels are significantly higher in Northern Ireland, and lower in Scotland, as compared to England and Wales. This paper examines educational differences in childbearing in the different countries of the UK in order to provide further insight into these trends. In some (mainly Nordic) European countries, the educational gradient of childlessness has shifted from positive to negative, raising questions about whether similar changes have occurred in the UK and whether they may be driving some of the cross-national differences. Hitherto, such analyses have not been possible because the sample sizes of women living in Scotland and Northern Ireland in surveys such as the General Household Survey and Understanding Society are too small. By utilizing the most recent administratively linked data on births occurring to women in the large, nationally

representative longitudinal studies of England and Wales (ONS Longitudinal Study), Scotland (Scottish Longitudinal Study) and Northern Ireland (Northern Ireland Longitudinal Study), we examine whether educational differences in childlessness have narrowed in more recent cohorts and whether educational differences in childlessness are similar in England & Wales, Scotland, and Northern Ireland. Moreover, the paper looks at educational differences in the propensity of women to proceed to second, third and higher order births, examining differences without and with controlling for age at last birth. Thus, we are able to explore the effect on transition to higher order births of the tendency for more educated women to delay entry into motherhood to later ages.

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**Why is the Amish population growing so quickly? A high-fertility sub-population within a low-fertility society**  
**Cory Anderson<sup>1</sup>, Stephanie Thiehoff<sup>2</sup>, Mary Shenk<sup>1</sup>, George Hayward<sup>1</sup>; <sup>1</sup>Pennsylvania State University, <sup>2</sup>University of Southampton**

As one of America's most persistently high-growth populations, the Amish are undergoing incredible changes. Populations are both concentrating in existing communities and migrating to new places. This growth affects North America's small rural communities, public services and infrastructure, and the Amish themselves. Furthermore, as an endogamous people with a heightened preference for group-oriented self-determination, the Amish are a useful case for demographic, sociological, genetic, and health research. Despite the phenomenal growth of the Amish, no current and reliable metrics exist for demographic indicators such as fertility, mortality, ageing patterns, age structure, and sex ratios. Accordingly, we ask why is the Amish population growing so quickly? To analyse this research question, we use Amish Directories, a unique data source of micro data collected and digitised by Cory Anderson which cover approximately 86% of all Amish in North America. Taking a demographic perspective, we generate and analyse different fertility measures for the Amish in combination with population structure and nuptiality indicators. Not only high fertility in past and present cohorts but also rapid succession rates of children early on result in a much quicker generational turnover than in the average US population. These trends seem to continue even within the youngest cohorts of women. Accordingly, the Amish population has grown and will most likely continue to grow in the future considerably quicker than the remaining population in North America.

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**Contribution of MAR to the TFR in Norway: Trends & composition**  
**Jenny Chanfreau<sup>1</sup>, Alice Goisis<sup>1</sup>, Kieron Barclay<sup>2</sup> and Katherine Keenan<sup>3</sup>; <sup>1</sup>University College London, <sup>2</sup>Stockholm University, <sup>3</sup>University of St. Andrews**

Demographic research from different countries has estimated that the contribution of births through medically assisted reproduction (MAR) to overall fertility levels is relatively small but non-negligible, up to 5% of TFR in recent years, depending on the country. Yet there is limited information available on how this trend has developed over the longer term. Further, given that the parental socio-demographic characteristics of MAR-conceived children differ from naturally conceived children, it is important to understand how the contribution of MAR to the fertility rate differs across sub-groups. Using long-running data from the Norwegian Population and Medical Birth Registers, this paper estimates the contribution of MAR to the overall Norwegian TFR from 1986 to 2018. The analysis further examines the trend in the contribution of MAR to age-specific fertility rates, and disaggregates the contribution by parity, multiple births and parental SES. The discussion focuses on the differential contribution of MAR to the composition of overall fertility and how this has changed over the decades since assisted reproductive technologies became available.

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## 9.00am Wednesday 7 September: Low fertility: Age and parity perspectives

### Why has the TFR fallen in many western countries over the past decade?

Marion Burkimsher; Independent researcher affiliated with the University of Lausanne

In the first decade of the new millennium, the trend in TFR for western countries was mostly upwards. This was caused by stabilisation of early (pre-modal age) fertility and a rise in late (post-modal age) fertility. However, since around 2010 TFRs have fallen again in many of these countries. Why? Using the Human Fertility Database, I examine how the shape of the fertility curve (age-specific fertility rates against age) has evolved. This indicates that late fertility rates have stabilised, but early fertility rates have declined, often steeply. In general, peak first birth fertility rates have also declined in recent years; in other words, the intensity of entry into motherhood at the modal age of first birth has declined. The narrowing of the fertility curve and its lower peak are the demographic reasons for the recent trend of falling TFRs. Demographers have predicted rising TFRs with slowing fertility postponement: this has the effect of widening the fertility curve as it approaches the underlying cohort fertility curve. However, the mean age at childbearing has continued rising and the fertility curve has narrowed. The similarity of the fertility curves with late childbearing suggests that a limit of the TFR of around 1.5 may be hit, with one child on average born before age 35 and 0.5 after that age. Not all developed countries have seen falling TFRs in recent years, e.g. the eastern European countries, Austria and Portugal. In contrast, the trend has been particularly marked in the Scandinavian countries and North America.

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### Economic cycles and fertility: Is the association changing? Evidence for Belgium, 1950-2015.

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The relationship between economic cycles - typically measured in terms of GDP growth or swings in unemployment - and aggregate-level fertility trends has received ample attention in the literature. Although some cases suggest a counter-cyclical association – economic recession lowering opportunity costs and increasing fertility – evidence for most countries suggests a pro-cyclical association with economic recessions inducing postponement and decline of period fertility. The larger part of the empirical evidence on this association stems from the second half of the 20th century when rising unemployment levels in many countries were largely driven by excess labour supply over demand. In recent decades, however, the influx of the younger generation into the labour market has grown increasingly deficient to compensate for older generations entering retirement. This raises the questions whether also the association between economic cycles and period fertility has changed in recent decades, as some recent evidence seems to suggest. This paper uses longitudinal microdata from Belgian censuses and registers for the period 1950 to 2015 to estimate nested hazard models of entry into parenthood and subsequent parity progression, which allows identification of the effects of economic cycles on subsequent stages of family formation and assessment of whether and how population subgroups have been differentially affected by economic cycles. In addition, the extended observation window encompassing several severe recessions makes it possible to test whether and how the effect of economic cycles on family formation has changed over time, and how this differs between population subgroups.

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### The end of a European exception: The first signs of a durable decline in French fertility?

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Having long represented an exception in the context of European fertility, France has recently witnessed a decline in its 'high' fertility (a trend accentuated by the COVID-19 pandemic). We aim to understand this trend by focusing upon the two specific characteristics of French fertility – low levels of childlessness and high progression to third births. Using data from the Insee Permanent Demographic Sample (EDP), we demonstrate how a renewed postponement of entry into motherhood amongst lower educated women and a changing composition of age at first birth have resulted in a falling progression to both first and third births. We argue

that the latter trend is likely to lead to a durable decline in French fertility – as women continue to delay childbearing, fewer women will progress to a third birth and thus a falling contribution of third order fertility rates will impact upon both the total and completed cohort fertility rate.

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**Fertility trends by birth order in Britain: The comparison between England and Wales, and Scotland**  
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The last two decades have witnessed significant fluctuations in fertility levels in Great Britain. Fertility increased in the first decade of the 21st century and declined thereafter. Our previous research showed that changes in first birth rates explained most fluctuations in aggregate fertility in England and Wales in the first two decades of this century. Second birth rates remained stable, whereas third birth rates slightly increased. Little is known about fertility trends by parity in Scotland. Similar to England and Wales, aggregate fertility increased in Scotland in the first decade of this century and declined thereafter. However, fertility levels have been 10% lower in Scotland compared to those in England and Wales. Using the ONS Longitudinal Study and the Scottish Longitudinal Study, we will investigate childbearing trends by birth order in Great Britain by country. We will examine whether TFR differences between England and Wales, and Scotland are the result of differences in the timing of childbearing, variations in levels of childlessness, or different family sizes among mothers. This is the first study to compare parity-specific fertility in Britain by country.

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**Changing childbearing age norms in Europe in times of fertility postponement**  
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Age norms play a key role in guiding a broad range of demographic choices, including childbearing behaviours. Hence, they are an important part of understanding current fertility patterns. While there is a vast body of literature examining age norms for childbearing at one point in time, to date, little is known about their temporal variation. This paper investigates changes in age-normative frameworks for the childbearing of men and women and their relation to actual fertility behaviours in 21 European countries, using data from two rounds of the European Social Survey. Using decomposition analysis techniques, for each country, we also explore to what extent the change in age norms is explained by compositional changes in population characteristics (education, employment, relationship status, childbearing timing and religiosity) or by the large diffusion of norms in favour of late fertility behaviours. Our preliminary findings show that norms have become more favourable to late parenthood, with most of the shift driven by the broad diffusion of attitudes favouring later fertility behaviours. Moreover, a weak association was found between macro-level indicators of the change in age-norms and observed postponement trends. The “perceived reproductive window”, which we define as the ages of life at which people are feeling most comfortable and legitimate in forming a family, has neither widened nor shrunk over time, but it has shifted to older ages for both men and women. This suggests that, in times of fertility postponement, European social contexts have also become more favourable to the later timing of childbearing.

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