

## Fertility & reproductive health strand

Strand organiser: Dr. Heini Väisänen (University of Southampton)

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**Fertility & reproductive health: Childbearing and child outcomes in Europe. Tuesday 15 September 9.30am**

Chair: Dr. Katherine Keenan (University of St Andrews)

**Understanding fertility trends in the constituent countries of the UK: What role do births to foreign-born mothers play? – Ann Berrington, Bernice Kuang; Centre for Population Change, University of Southampton**

This paper investigates, using data from vital registration, whether childbearing trends are diverging in England, Wales, Scotland and Northern Ireland. The work forms part of a larger project that looks at understanding and projecting fertility trends for the UK. Insights as to how and why fertility rates are diverging are useful for those charged with setting assumptions for future projections for the devolved nations. This paper examines differences in the timing of entry into parenthood, age patterns of fertility and completed family size. We study the extent to which these divergences in fertility can be explained by births to foreign-born women. We find that up until the 1980s, fertility rates in Scotland were just above those of England, but from then on have been significantly and increasingly lower. During the 1970s, 1980s and 1990s, fertility rates in Wales were consistently higher than England. However, since the 2000s they have been increasingly below levels for England. In the last decade Wales in particular has seen a dramatic drop in teenage fertility, whilst both Wales and Scotland have seen faster declines in childbearing at later ages than England or Northern Ireland. Our findings suggest that differences in period fertility rates between England and Wales are explained by the greater contribution of foreign-born women to childbearing in England. However, the divergence between England and Scotland is not explained by migrant fertility. The paper concludes by outlining unanswered questions and next steps for research into these divergences.

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**Environmental experiences and women's infant feeding journeys: a survival analysis using an online survey of UK mothers – Laura J Brown<sup>1</sup>, Emily Emmott<sup>2</sup>, Sarah Myers<sup>2</sup>, Abigail Page<sup>1</sup>; <sup>1</sup>London School of Economics, <sup>2</sup>University College London, <sup>3</sup>London School of Hygiene & Tropical Medicine**

The UK has some of the lowest breastfeeding rates in the world. Whilst many UK mothers initiate breastfeeding, continuation rates remain low. This is a key public health problem, and one that does not just fall on mothers to solve. Understanding environmental influences on breastfeeding duration can guide interventions to improve breastfeeding rates. With data from an online "Social Support and Feeding Your Baby" survey of UK mothers, Cox-Aalen survival models are used to test whether negative subjective environmental experiences (indexed by five environmental questions) adversely impact women's breastfeeding chances. Models control for key infant and maternal characteristics known to impact breastfeeding (birthweight and maternal age, ethnicity and parity), socioeconomic status and clustering at the region level. When effects were set as time-invariant, hazards of stopping breastfeeding were higher for mothers who reported that (1) their area wasn't a nice place to live (HR 1.220), that (2) people tended not to know each other (HR 1.095), or (3) not to help each other out (HR 1.274), but lower for mothers who reported that (4) littering and rubbish (HR 0.903) or (5) crime were problems in their area. Although these hazard ratios were not significant, crime did have a significant time-varying effect, with its counterintuitive protective effect evident in the first 18 weeks postpartum. These results tentatively suggest that environmental experiences shape women's infant feeding journeys in complex ways. Harsher physical and social environmental conditions are assumed to deter women from breastfeeding, but this may not always be the case.

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**Church attendance is positively related to social support, and social support is positively related to fertility and improved child outcomes among English mothers – John H. Shaver<sup>1</sup>, Eleanor Power<sup>2</sup>, Benjamin Purzycki<sup>3</sup>, Joseph Watts<sup>1</sup>, Rebecca Sear<sup>4</sup>, Richard Sosis<sup>5</sup>, Joseph Bulbulia<sup>6</sup>; <sup>1</sup>University of Otago, <sup>2</sup>London School of Economics, <sup>3</sup>Aarhus University, <sup>4</sup>London School of Hygiene & Tropical Medicine, <sup>5</sup>University of Connecticut, <sup>6</sup>University of Auckland**

Studies consistently find a positive relationship between an individual's participation in religious rituals, the size of her social network, and the level of cooperation within that network. Another line of research finds that alloparental support

to mothers increases maternal fertility and improves child outcomes. Though plausible, whether religious cooperation extends to alloparenting and/or affects child development remains unclear. Using 10 years of data collected from mothers (N = 8,296 to N = 8,298) and their children (N = 1,768 to N = 5,582) enrolled in the Avon Longitudinal Study of Parents and Children (ALSPAC), we evaluate the predictions that church attendance is positively associated with social support and fertility, and that social support is positively associated with fertility and child development. Bayesian models reveal that: 1) a woman's church attendance (relative to none) is positively related to her social network support and aid from co-religionists, 2) aid from co-religionists is associated with increased family size, while 3) social network support is negatively related to fertility. Moreover, aid from co-religionists remained consistent over time, while social network support decreased over time. These findings suggest that religious and secular networks differ in their longevity, and have divergent influences on a woman's fertility. We find some suggestive evidence that support to mothers and aid from co-religionists is positively associated with a child's physiological development and cognitive ability at later stages of development.

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**Adolescent mental health and social outcomes in children conceived through medically assisted reproduction – a within-family analysis – Alice Goisis<sup>1</sup>, Maria Palma<sup>1</sup>, Hanna Remes<sup>2</sup>, Riina Peltonen<sup>2</sup>, Pekka Martikainen<sup>2</sup>; <sup>1</sup>University College London, <sup>2</sup>University of Helsinki**

The number and proportion of children conceived through medically assisted reproduction (MAR) is steadily increasing, underlining the importance of better understanding of correlations between infertility treatments and offspring health and social outcomes. The poorer birth and early life outcomes among MAR-conceived children are well established, but there is much less evidence on longer-term outcomes, and we lack a comprehensive view on how MAR-conceived children are doing compared to naturally conceived children. Using administrative register data on all children born in 1995–2000 in Finland (n=351,547), we examined several mental health and social outcomes in late adolescence (ages 16–18 in 2011–2018). We assessed differences by mode of conception in the general population, adjusting for observed child and parental characteristics (e.g. birth order, sociodemographic factors), and within families, comparing MAR and naturally conceived siblings to account for all family characteristics that are shared between siblings. Unadjusted models showed externalization, developmental and high-risk health behaviours care episodes, school drop-out, not being in education or employment, or early home-leaving were less common among MAR-conceived children. Adjustment for parental socioeconomic characteristics attenuated the differentials in social outcomes and revealed slightly higher risks of internalizing and developmental mental disorders among MAR-conceived children. For a variety of mental health and social outcomes in late adolescence, MAR-conceived children showed similar or better outcomes than naturally conceived children. However, internalizing mental disorders appeared to be more common among MAR-conceived children, both when adjusting for observed child and parental characteristics and when comparing siblings.

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**Fertility & reproductive health: Childlessness & low fertility. Tuesday 15 September 1.00pm**

**Chair: Dr. Alice Goisis (University College London)**

**Childlessness among tomorrow's older population and implications – Ngairé Coombs, Holly McLeod, Angele Storey; Office for National Statistics**

Our population is ageing due to declining fertility and an increase in life expectancy. It is important to investigate the characteristics of the current and future older population to understand and plan for the implications of an older population on society. In this study we use ONS cohort fertility data to compare the childbearing patterns of women completing childbearing without children, for three large cohorts, born in the last 100 years, resulting from birth spikes post WW1; WW2 and in the 1960s). We explore possible reasons for remaining childless and how these differ between the three cohorts and we project how the childlessness patterns observed will impact on the number of people reaching old age without children over the next 25 years. We compare characteristics including health, wellbeing, social relations and receipt of informal care for older people today with and without children and look at the potential implications of high levels of childlessness in tomorrow's older population for these different aspects of older people's lives, in particular, the provision of informal care.

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**Birth strike? How are environmental concerns associated with young adults' fertility intentions? – Ann Berrington, Centre for Population Change, University of Southampton**

Young people are calling for greater action against environmental destruction and climate change. At the same time, birth rates to young adults have plummeted, raising the possibility that the two could be inter-linked. For activists engaged in the Birth Strike movement the two are clearly linked, with individuals declaring that they will remain childfree until the 'climate emergency' has been resolved. What we do not know is whether, in the general population, increasing concerns about climate change and sustainability are influencing intended family size. Evidence from the US 1970s fertility bust following increased awareness of rapid population growth suggests this is possible (Preston, 1986). This paper contributes to our understanding of whether attitudes to the environment and environmental behaviours are associated with fertility intentions today in the UK. The paper focuses on men and women aged 18-29 interviewed in the United Kingdom Household Longitudinal Study. In bivariate analyses no relationship is found between environmental concerns/behaviour and intentions to remain childfree. This is because there is a strong educational gradient in childbearing intentions (with those least educated having the greatest intention to remain childfree) and in environmental concerns (those least educated tend to have the largest carbon footprint). In multinomial logistic regression analyses of intended family size we find attitudes towards climate change and the environment have no systematic relationship with intended family size. However, environmentally friendly behaviour associated with intentions to remain childfree and lower intentions to have three or four children. This association is particularly strong for graduates.

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**Changes in partnering and first birth risks in Finland in 2000-2018– Julia Hellstrand<sup>1, 2</sup>, Jessica Nisén<sup>1, 2</sup>, Mikko Myrskylä<sup>1, 2, 3</sup>; <sup>1</sup>University of Helsinki, <sup>2</sup>Max Planck Institute for Demographic Research, <sup>3</sup>London School of Economics**

The strong decline in period fertility in the 2010s in Finland is mainly driven by first births. However, it has not been studied how the decline in first birth risks relate to changes in partnering. We compare changes in union formation and dissolution and changes in first birth risks within unions among men and women and among educational groups, and estimate the impact of these changes on ultimate childlessness. Using Finnish register data and a Markov chain multistate approach we calculated the yearly age-specific transition probabilities between states (single, cohabitation, marriage, and first birth) among 15-45-year old childless men and women living in Finland in 2000-2018. We found decreased progression into unions, increased progression out of unions, and decreased progression to first births within unions among childless men and women. Changes in partnering were observed mainly among the less educated, while changes in first birth risks were more similar across all educational groups. The expected proportion ultimate childless based on the yearly age-specific transition probabilities rose in 2010-2018 from 21 to 33 per cent for women and from 29 to 44 per cent for men. One third of the increase for women and almost one-half of the increase for men was explained by the increased probability to remain single. Our results contribute to the understanding of the recent Finnish fertility decline, and illustrate how the already comparatively high rate of ultimate childlessness in Finland would strongly increase if the current pattern in partnering and first birth risks would prevail in the future.

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**Age at first birth and completed fertility across the 1940s–1970s birth cohorts - Kryštof Zeman<sup>1</sup>, Éva Beaujouan<sup>1</sup>, Mathías Nathan<sup>2</sup>; <sup>1</sup>Wittgenstein Centre for Demography and Global Human Capital (IIASA, VID/ÖAW, WU), <sup>2</sup>Programa de Población, Facultad de Ciencias Sociales, Universidad de la República, Uruguay**

The rise in age at first birth has been universal across the low fertility countries over the last decades. In parallel, cohort fertility levels have tended to decrease, but they stagnated or even experienced a slight rise in a small set of countries in the most recent birth cohorts. Using large-scale surveys, census data and published data from a range of low-fertility countries of different regions (Austria, Switzerland, Great Britain, France, Spain, Italy, Sweden, Uruguay, and USA), we investigate the relationship between age at first birth and mother's completed cohort fertility conditional on age at first birth across the 1940s–1970s birth cohorts, and study how it may have shaped the overall change in total cohort fertility levels. We observe that in a few countries and cohorts, completed fertility among later-starting mothers increased, reflecting a "catch up" effect among those who had postponed childbearing. However, in the majority of examined countries and cohorts the relationship between age at first birth and mothers' completed fertility remained almost unchanged. Such stability is striking in cohorts where many other family behaviours were changing and mean ages at first birth increased by around 4 years. To quantify the contribution of changes in age at first birth to overall change in cohort

fertility across birth cohorts, we will rely on a decomposition analysis that will also take into account trends in childlessness and mothers' completed fertility conditional on age at first birth

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**Do one child women revise their fertility intentions downwards after first birth? Evidence from the USA and UK - Alice Raybould & Rebecca Sear; London School of Hygiene & Tropical Medicine**

The existence of a "fertility gap" between stated ideal and actual childbearing in nearly all high-income, low-fertility settings suggests there are impediments to women achieving their childbearing goals. Previous work suggests this gap is primarily driven by a lack of progression from first to second child. However, when analyses only focus on whether one child women go on to fulfil a stated intention for a second birth, they suffer from a selection problem. These models exclude one child women who may have intended to have more than one child before their first birth, but revise their expectations downwards after this event. This would be logical given the significant changes in lifestyle and division of labour that occur when individuals become parents. Our study explores whether the number of children expected among one child women falls around the time of first birth in the USA and UK. Using the US National Longitudinal Survey of Youth 1979 cohort and the British Household Panel Survey, we use piecewise linear growth curve models to identify trends in fertility expectations. In the US we observed a drop from an average of 1.9 to 1.4 expected children, and in the UK a drop from 1.75 to 1.3 in the 4 years proceeding a first birth among one child women. Ongoing work seeks to understand what exactly (e.g. change in amount and division of labour, partner effects) is driving this drop in expectations.

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**Fertility & reproductive health: Sources of variation in childbearing behaviour. Tuesday 15 September 4.00pm**

**Chair: Professor Ann Berrington (University of Southampton)**

**Marital vs. non-marital births in England and Wales: Changing patterns over space and time (1951-2011) - Stephanie Thiehoff<sup>1</sup>, Brienna Perelli-Harris<sup>1</sup>, Andrew Hinde<sup>1</sup>, Agnese Vitali<sup>2</sup>; <sup>1</sup>University of Southampton, <sup>2</sup>University of Trento**

One major change during the Second Demographic Transition was the decline in proportions of births to married couples in comparison to births to cohabiters and in some part single mothers. Whereas in the 1981 almost 9 out of 10 of children were born within marriage in England and Wales this decreased to just about 5 in 2018. However, the national average hides major geographical differences. In this analysis, I study the decrease in shares of marital births starting in 1951 prior to the Second Demographic Transition to 2011. The main aim is to investigate if and how spatial diffusion mechanisms might have contributed to the fall in share of marital births. Descriptive maps using data on Local Authority level reveal that London as well as other urban areas, especially those rapidly de-industrialising in the 1980s, seem to be forerunners of this new family formation behaviour. Over just one decade, England and Wales witnessed a major decline in shares of birth within marriage spreading from forerunner areas across space. Given previous research my assumption is that family formation patterns in one area are dependent on that of neighbouring areas. In the 2010s, London is instead the area with the highest share of marital births with some boroughs even reversing previous pattern. To investigate the factors which are associated with declining proportions of marital births and if spatial diffusion mechanisms contributed to the change in family formation patterns I will run Spatial Durbin Models for every ten years from 1981 to 2011.

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**The impact of forced migration on reproductive behaviour: Case study of Syrian refugees in Turkey - Ilgi Bozdog - European Doctoral School of Demography & World Food Programme & University of Paris 1 Pantheon Sorbonne - Institut of Demography**

Population dynamics is one of the core elements to fully understand the situation of certain populations such as migrants, refugees, or certain ethnicities. Currently, international migration, refugees, internally displaced populations have been in the high interest for all academicians, international organizations, and governments. Yet, the main information on the refugee demographics is missing where there are a lot of tendencies to change towards mortality and fertility rates. Turkey is a host to the largest refugee population in the world: around 3.6 million Syrian refugees have been registered as of 27 December 2018. • Hypothesis: Forced migration has an impact on the entire population dynamics of the targeted population. As a result, main demographic indicators tend to change. The first hypothesis is that there is potentially more

women working and involved in daily jobs than in Syria. As a result, it might have affected the fertility rates of the woman. The second hypothesis is that the change of gender roles has an impact on the overall fertility behaviour. • Research Question: According to the literature, the social behaviour of the migrant populations tends to approach to the host community. This theory has been confirmed during the qualitative data collection with the Syrian women living in Turkey. It's been observed that the number of women taking care of daily jobs and involvement in the labour market has increased. More women are working in order to compensate for the loss of income in the family finances following the migration. As a result, there might have been an impact on the reproductive behaviour of woman after their arrival in Turkey. In that sense, the research question is what is the impact of forced migration on the reproductive behaviour of refugee woman and what are the main causes if there is a change on the reproductive behaviour? •Data Resources to be used: 1) Comprehensive Vulnerability Monitoring Exercise (CVME) – Completed with 1,300 households from 2018 by World Food Programme. A 9-page questionnaire on demographics, education, health, gender, income and livelihood. 2) PAFAM 2009 Syria and MICS 2006 Syria

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**Jewish fertility in Europe and across the globe – Daniel Staetsky<sup>1</sup>, Sergio DellaPergola<sup>2</sup>; <sup>1</sup>Institute for Jewish Policy Research, <sup>2</sup>Hebrew University of Jerusalem**

Under conditions of modernity Jews, as a rule, possess a low birth rate. Further, between the mid-19th and the mid-20th century, both in Europe and America, Jewish fertility was lower, in relative terms, than fertility of the surrounding non-Jewish populations. This is a very mature conclusion that is reiterated in all overviews and case studies of Jewish fertility at least since the beginning of the 20th century. With the arrival of the demographic transition, Jewish fertility decline preceded the decline of other populations. The modern levels of fertility, around or below 2 children per woman, were reached by Jews ahead of non-Jews. In contrast to the historical picture, the most recent developments in Jewish fertility are somewhat less clear. Comprehensive mapping of the most recent levels of Jewish fertility is currently lacking, and so, it is not entirely clear to what extent the post-transitional situation of the relatively low fertility characteristic of the mid-19th to mid-20th century Jewish fertility is still dominant in the today's Diaspora context, especially in Europe. This topic is the core concern on this paper. The analysis: (1) builds on the census, vital registration and survey datasets allowing identification of Jews, across the globe; (2) derives indices of Jewish fertility by country; (3) compares fertility of Jews to non-Jewish populations surrounding them. The paper demonstrates a variety of 'fertility situations' of Jews (in particular, instances of both high and low fertility are observed) and discusses the factors shaping the different scenarios.

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**Spatial variations of cohort fertility, parity ratios, and childlessness in Greece – Pavlos Baltas, GIS and Thematic Mapping Laboratory, University of Thessaly, Greece**

The objective of this work is to present the spatial differences of CTR, Parity ratios, and Childlessness in Greece. The analysis is based on Greek population census statistics (most recent in 2011). We calculate and visualize (via thematic mapping) complete cohort fertility rate, parity progression rates, and Childlessness among women born between 1925 and 1975 for all 52 Greek Prefectures (NUTS 3). The majority of cohorts (1925-1965) have completed childbearing by 2011. For more recent cohorts (1966-1975) completed fertility has initially estimated by "freezing" age-specific rates at the levels of the last observed period. Preliminary results show that over time there is a decrease of CTR and the size of the families with a simultaneous increase of childlessness. The decline of CTR concerning women born between 1955 and 1965, was mostly driven by the reduction of family size (decrease of parity progression ratios to third and higher-order births was continuous from women born after 1935) As the "two-child family" is becoming the norm. By contrast for women born after 1965 (till 1975) the reduction of complete fertility is largely due to the increasing childlessness (more and more women reaching the age of 45 years old without having a child) and the decrease of second-birth rates. Regarding spatial variations, excluding the different starting points of CTR level for each spatial unit, the decrease of cohort fertility and the size of the family was a common trend over the generations in all Greek prefectures. The increase of childlessness, differs spatially, as it is more intense in the prefectures which conclude the bigger urban metropolitan areas of the country (like Attica, where lives almost one-third of the total population).

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**Expectations and reality of childbearing – Marion Burkimsher, independent researcher affiliated to the University of Lausanne**

In the first wave of the Generations and Gender Surveys a number of questions were asked on the expected impact that having a child in the next three years would have on the respondent's life. These facets of life included the impact on one's finances and the effect on closeness to one's partner. A second wave of the survey was carried out three to four years later. In both waves respondents were asked to rate their level of satisfaction with the relationship to their partner. They were also asked how easy or hard it was for their household to 'make ends meet'. We examined what changes occurred in partner satisfaction and in personal finances for respondents who did, in fact, have a child between the two waves. Did these match with their declared expectations? Nine countries had data from both waves. We found that, on average, the level of partner relationship stayed the same – at a high level – through the childbearing process, from before the birth, through pregnancy and the first two years of a baby's life. Men were more content than women and the relationship was slightly more positive through the birth of a first child than the second. The majority of respondents expected that having a child would make them worse off financially. However, for many of them, their finances stayed at a similar level over both waves, and between a fifth and a third of respondents found it easier to make ends meet after having a child.

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**Fertility & reproductive health: Inequalities in reproductive health and pregnancy outcomes. Wednesday 16 September 9.30am**

**Chair: Professor Ernestina Coast (London School of Economics)**

**Pregnancy awareness and confirmation among adolescents seeking abortion-related care: a comparative mixed methods study in Ethiopia, Malawi and Zambia - Joe Strong<sup>1</sup>, Ernestina Coast<sup>1</sup>, Malvern Chiweshe<sup>1</sup>, Tamara Fetters<sup>2</sup>, Risa Griffin<sup>2</sup>, Luke Tembo<sup>2</sup>, Abraham Getachew; <sup>1</sup>London School of Economics, <sup>2</sup>IPAS**

This paper describes and explores trends in pregnancy awareness and confirmation in adolescents seeking abortion-related care. It comprises a cross-national comparison of interviews and quantitative data with 10-19-year-olds (n=343) from two health facilities in each of three countries, purposively selected for a range of politico-legal contexts: Ethiopia, Malawi and Zambia. Preliminary results illustrate the complexities and pluralities of factors that lead to adolescents becoming aware of their pregnancies, particularly unexpected pregnancies, as well as the differences between awareness factors and the method of confirmation. Both individual and institutional barriers, such as delay in linking sexual intercourse, symptoms and pregnancy, as well as obstacles to obtaining urinary tests, resulted in many adolescents seeking abortions after the first trimester. The results indicate that, particularly when unexpected / unintended, timely awareness and confirmation of pregnancies was determined by chance and circumstance, e.g. availability of resources, support and information. The time sensitivity of abortion, regarding method options available, legal framework and changes in pregnancy acceptability, make the findings in this paper important in the necessary promotion of a focus on pregnancy awareness and confirmation as a critical determinant of future decisions along the pathway of abortion-related care-seeking.

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**Prioritizing the needs of adolescents by building the evidence base for life-saving impact of scaling up contraception and abortion for adolescents in Ethiopia, Malawi and Zambia using LiST – Tiziana Leone<sup>1</sup>, Laura Sochas<sup>1</sup>, Tamara Fetters<sup>2</sup>, Ernestina Coast<sup>1</sup>; <sup>1</sup>London School of Economics, <sup>2</sup>IPAS**

Systematic understanding of the life-saving impact of scaling up contraception and safe abortion interventions for adolescents is absent. The evidence that does exist does not disaggregate for this critical age group. There is an urgent need to understand how contraception and abortion care services can be provided for, and accessed by, adolescents. The Lives Saved Tool (LiST) is an open access modelling software, which estimates the impact of maternal and child health interventions on future outcomes (e.g.: lives saved, abortions averted). Using three country case studies-Ethiopia, Malawi, Zambia- the aim of this paper is to understand the health system costs and health outcomes of increased adolescent use of contraception and/or abortion-related care. We iteratively apply scenario building to ascertain how different interventions in both contraception and post abortion care, as well as safe abortion services, might affect adolescent health outcomes, both from the perspective of health system costs and lives saved. The scenarios have been informed by key informant interviews [n=9] in each of the countries to establish the quality of available data and the feasibility of future projections.



Each of the three study countries has demonstrated high-level commitment to the development and provision of sexual and reproductive health services for adolescents, although the rate of roll-out and the implementation, legal and policy contexts are variable. The importance of this study is twofold: to increase awareness of the impact of sexual and reproductive health interventions for adolescents in low-resource settings; and, to demonstrate the novel use of LiST as a tool for impact measurement in the field of adolescent health.

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**Prenatal sex-selection against females in the UK: evidence and policy – Sylvie Dubuc, University of Reading**

In the UK, a biased sex ratio at birth (SRB) among India-born women over 1990-2005 provided evidence for prenatal sex-selection against females (PSS). PSS raised considerable media attention and led to 2015 parliamentary debates on the abortion law in the UK. I draw from prior research using annual vital registrations to present an updated in depth analysis of SRB trends from 1969 to 2017/18 among the predominant British South Asian groups (Indian, Pakistani and Bangladeshi) showing contrasting sex-ratio patterns between women groups. I build on previous work by Dubuc and Sivia to interpret SRB results and evidence a reduction in sex-selection propensity and prevalence in the most recent period. Results are discussed in the context of the UK debates on sex-selective abortion. I discuss the role of evidence in the policy debates and the challenges of evidence-based policy in this context.

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**The vulnerable body: Women's sexual and reproductive health and rights during peace and war in Colombia - Signe Svallfors, University of Stockholm**

Women's experiences of war were exceptionally acknowledged in the process of ending the half-century long internal armed conflict in Colombia, above all in terms of conflict-related sexual violence. But the impacts of war on women's sexual and reproductive health and rights in Colombia has not gained sufficient attention in empirical literature. Applying vulnerability theory to the study of armed conflict and using Colombia as an illustrative case, this paper explores the how women's social realities are particularly affected by violence in light of their sociobiological roles. The empirical material consists of 15 semi-structured expert interviews with representatives from non-governmental, state and international organizations specialized in sexual and reproductive health, women's rights, and the peace process. Core themes to be explored include the social construction of vulnerability, the relationship between power and sexuality in the effects of war, and how vulnerabilities vary between subgroups of women. Relating to a broader field of gendered and health consequences of war, the findings can be used to inform comprehensive interventions for women's health as well as transitional justice processes.

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**Social inequalities in the risk of miscarriage among British women – Heini Väisänen<sup>1</sup>, Katherine Keenan<sup>2</sup>; <sup>1</sup>University of Southampton, <sup>2</sup>University of St Andrews**

Individuals with lower socioeconomic status (SES) tend to have poorer health, including sexual and reproductive health (e.g. pregnancy outcomes and sexually transmitted infections). The social gradient in reproductive health may have multiple explanations including increased stress, and poorer health behaviours. However, there is a lack of research on the social determinants of miscarriage and the few existing studies show mixed results. We use data from the National Child Development Study (1958 birth cohort) and the British Cohort Study (1970) to investigate whether individual SES is longitudinally associated with subsequent reported miscarriages and whether the association varies by women's age or cohort. Our preliminary analyses apply random-intercept logistic regression to the 1970 cohort data to model the likelihood of reported miscarriage according to SES in previous sweeps. The results suggest a U-shaped relationship between occupational social class and the risk of miscarriage. Women with low social class (unskilled) might have a higher risk of miscarriage e.g. due to high stress levels resulting from low income or poor working conditions, or risky health behaviours. High social class (professional) might also be associated with high stress levels in high-pressure occupations. Our next analytical steps include (1) building a longitudinal dataset including time-varying outcomes/covariates; (2) conducting random and fixed effects models with education, income, and partner's SES as covariates; and (3) conducting all these analyses also for the 1958 cohort.

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**Medically assisted reproduction in the high fertility context of Utah: a within-family analysis of birth outcomes by the type of treatment – Alina Pelikh<sup>1</sup>, Alice Goisis<sup>1</sup>, Ken Smith<sup>2</sup>; <sup>1</sup>University College London, <sup>2</sup>University of Utah**

It is well-established that children born after MAR have on average worse birth outcomes (such as low birth weight and prematurity) than children who are conceived naturally (e.g. Hansen et al. 2005, 2013). It is likely that the causes behind these associations are multifactorial and interrelated, however we have a very limited understanding of the potential role played by the treatments per se, the confounders (e.g. parental subfertility), and the mediators (e.g. child's birth order, multiplicity) in explaining these associations. In this paper, we focus on analysing birth outcomes of MAR children in Utah with a specific emphasis on the influence of the type of MAR treatment using data from 2009-2017 from the Utah Population Database (UPDB). Utah presents a unique context with a combination of traditionally high fertility rates together with the highest proportion of children in the US born through MAR (around 5%). UPDB incorporates data from Utah birth certificates, which contain a set of unique questions related to the length of infertility and fertility treatments used to help getting pregnant (e.g. artificial insemination or intrauterine insemination, assisted reproductive technology, or fertility enhancing drugs). We will analyse a set of crucial child outcomes including birth weight, low birth weight (<2500 grams), gestational age and prematurity (<37 weeks), and focus on within-family analyses (siblings fixed effect). This method has an advantage of accounting for parental characteristics shared by siblings (e.g. subfertility) and therefore helps disentangling the effects of some unobserved factors from those of MAR treatments per se.

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**Fertility & reproductive health: contraceptive use. Wednesday 16 September 4.00pm**

**Chair: Dr. Heini Vaisanen (University of Southampton)**

**Behavioural factors affecting condom-use negotiation among young South African females - Acheampong Yaw Amoateng & Ololade Julius Baruwa; North-West University, South Africa**

Theory of Planned Behaviour was used to construct the behavioural factors that are associated with condom-use negotiation among South African female youth. The study used data of females 15-34 years from the 2016 South African Demographic and Health Survey. Logistic regression modelling was employed to analyse the data. Result showed that female youth who did not intend to use contraceptive had lower risk of condom-use negotiation. Female youth who had tested for HIV (OR; 3.07, CI: 1.72-5.49), ever experienced emotional violence (OR; 1.58, CI: 1.01-2.48) and used condom at last sex (OR; 1.83, CI: 1.22-2.74) were more likely to negotiate for condom use. Female youth should be exposed to behavioural change interventions that can positively impact negotiation for condom use.

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**Effects of condom availability in contraceptive use: A field experiment in a hostel in Lima - Franco Vega Ignacio; University of Bath**

Objectives : This study aims to assess the effect that different levels of condom availability have in its usage. Background: Peru has a high number of unintended pregnancies, and STDs rates are growing. New strategies to prevent these issues are needed. Limited attention has been paid to contextual factors in the condom use decision , such as condom availability and ease of access. Previous studies have used self-reported measures. Due to social desirability and recalling difficulty, that methodology has proved unreliable. Methodology: I used Hostales (hourly-rented lodgings) to conduct a field experiment in Lima. By randomly allocating 102 couples to three experimental groups , I was able to accurately evaluate the effect that different levels of availability of condoms had on contraceptive use. Instead of using self-reported measures, after a couple left the Hostel, I searched the room for used condoms. Results/Analysis: Using a logistic regression model, I established that couples in a room with a condom on the nightstand are 270% more likely to use contraceptives than the control group. Those who had a condom available outside the room, in the reception desk, were 176% more likely to use one. The effect of this intervention is stronger compared to other condom distribution initiatives. Conclusions: Facilitating condom access in Hostales could be a suitable strategy to lessen the quantity of unwanted pregnancies and STDs in the country. Hostales appear to be a viable experimental setting to explore other aspects of a free condom distribution policy, as well as different issues of sexual health.

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**The impact of ASHA's educational level on the contraceptive acceptance rate among the young married couples in India – Isha Sharma, *London School of Economics***

While the consequences of various pill scares have been relatively well-documented in the public health literature revealing a drop in pill use and a rise in unplanned pregnancies and abortion rates, researchers rarely considered that these controversies would affect women contraceptive practices differently according to their social background. Indeed, social differentiations in reaction to pill scares could contribute to reinforce the social gradient in the use of contraceptive methods. Using data from three state nationally representative cross-sectional surveys conducted in France in 2010, 2013 and 2016, we studied the changes in women's contraceptive uses around the French pill scare that occurred in 2012-2013. We focused on the changes in the use of all contraceptives available under medical prescription on one hand, and on each specific method (pill, IUD, implant, patch or vaginal ring, and female sterilization) on the other hand according to the women's social background. We saw a social gradient in contraceptives changes. The decline in the use of contraceptives methods available under medical prescription was particularly marked for women from lower and higher classes in which we observe a decrease in pill use between 2010 and 2013, whereas it was observed only between 2013 and 2016 among middle class women. Moreover, while some women from upper class shifted from pill to IUD between 2010 and 2013, this was not the case for their less privileged counterparts. As a consequence, it seems that the French pill scare led to the reshaping of social inequalities in accessing to medical contraceptives.

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**The French pill scare and the reshaping of social inequalities in access to medical contraceptives - Mireille Le Guen; *UCLouvain, Ined***

While the consequences of various pill scares have been relatively well-documented in the public health literature revealing a drop in pill use and a rise in unplanned pregnancies and abortion rates, researchers rarely considered that these controversies would affect women contraceptive practices differently according to their social background. Indeed, social differentiations in reaction to pill scares could contribute to reinforce the social gradient in the use of contraceptive methods. Using data from three state nationally representative cross-sectional surveys conducted in France in 2010, 2013 and 2016, we studied the changes in women's contraceptive uses around the French pill scare that occurred in 2012-2013. We focused on the changes in the use of all contraceptives available under medical prescription on one hand, and on each specific method (pill, IUD, implant, patch or vaginal ring, and female sterilization) on the other hand according to the women's social background. We saw a social gradient in contraceptives changes. The decline in the use of contraceptives methods available under medical prescription was particularly marked for women from lower and higher classes in which we observe a decrease in pill use between 2010 and 2013, whereas it was observed only between 2013 and 2016 among middle class women. Moreover, while some women from upper class shifted from pill to IUD between 2010 and 2013, this was not the case for their less privileged counterparts. As a consequence, it seems that the French pill scare led to the reshaping of social inequalities in accessing to medical contraceptives.

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**Power, sex, and contraception among Chinese married couples - Muzhi Zhou and Man-Yee Kan; *University of Oxford***

This research examines the power relations between Chinese married couples through their sex and contraceptive attitudes and behaviours. We examine several determinants such as their gender, hukou (place of registration) status, education, income, housework, and their relative economic resources within marriages to examine the couple's sex and contraceptive decisions. Data are from the 1990, 2000, and 2010 women's status survey (WSS) in China, which are national representative surveys and are jointly conducted by Chinese Federation of Women and the China National Bureau of Statistics. This study is among the first to link Chinese couple's sexual activities with gender power relations within marriage.

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**The importance of local violence for the uptake of female sterilization: Evidence from the Colombian armed conflict – Signe Svallfors, *Stockholm University***

Women's experiences of war were exceptionally acknowledged in the process of ending the half-century long internal armed conflict in Colombia, above all in terms of conflict-related sexual violence. But the impacts of war on women's sexual and reproductive health and rights in Colombia has not gained sufficient attention in empirical literature. Applying vulnerability theory to the study of armed conflict and using Colombia as an illustrative case, this paper explores the how

women's social realities are particularly affected by violence in light of their sociobiological roles. The empirical material consists of 15 semi-structured expert interviews with representatives from non-governmental, state and international organizations specialized in sexual and reproductive health, women's rights, and the peace process. Core themes to be explored include the social construction of vulnerability, the relationship between power and sexuality in the effects of war, and how vulnerabilities vary between subgroups of women. Relating to a broader field of gendered and health consequences of war, the findings can be used to inform comprehensive interventions for women's health as well as transitional justice processes.

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