



Postponing Childbirth, Extending Fertility? Biotechnologies and the Transformations of Reproductive Life

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De Montfort University

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Biotechnologies and the Transformations of Reproductive Life

Hugh Aston 1.47 & 1.48

De Montfort University

Leicester

UK

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Organisers:

Kylie Baldwin

Nolwenn Bühler

Lorraine Culley

Irene Daly

Cathy Herbrand

Nicky Hudson

Caroline Law

INTRODUCTION

The postponement of childbirth has become an issue of significance to policy makers, medical experts, demographers, and social scientists, as well as for people wishing to become parents. Characterized by plummeting fertility rates, the situation in Europe has been defined by demographers as a 'baby bust' rather than a 'baby boom' (Baird et al. 2005). Simultaneously, a range of biotechnologies has opened up possibilities for anticipating, screening, preserving, or extending fertility. Egg donation, egg freezing, ovarian reserve testing, as well as techniques which aim to 'rejuvenate' the oocytes, offer possibilities for intervening in the limits of fertility, thus reconfiguring the lifecourse (Friese et al. 2008), and 'life itself' (Rose 2007; Kowal & Petersen 2015).

As an empirical field, several strands of emerging research relating to age, time, reproduction and technologies can be identified. Existing work on reproductive timing and the determinants of the postponement of childbirth has interrogated structural elements such as the impact of financial challenges, day care facilities, and career paths (e.g. Mills et al. 2011; Schippers 2011). The biomedicalization of reproductive ageing and questions about its effects on reshaping bodies and subjectivities are emerging as further areas of academic enquiry (e.g. Clarke et al. 2003; Friese et al. 2006; Szewczuk 2012). Studies specifically focused on women's and men's awareness of age-related infertility (e.g. Azhar et al. 2015) and the inequalities these technologies reproduce (e.g. Bute and Jensen 2010) are also developing. Whilst the impact of male age on fertility is increasingly being brought into focus (e.g. Belloc et al. 2014), little empirical work with men currently exists.

In the Reproduction Research Group at De Montfort University (DMU), we are working on a number of projects which explore age, time, gender, reproduction and technology. This two-day international symposium invites key authors, researchers and other stakeholders in the field to join us in exploring and reflecting on this growing body of work and the ways in which the lifecourse and 'life itself' (Rose 2007) are being reconfigured by technologies of age and timing.

THE REPRODUCTION RESEARCH GROUP

The Reproduction Research Group at De Montfort University is a vibrant, multi-disciplinary research group based in the Faculty of Health and Life Sciences. The group has representation from sociology, anthropology, psychology, nursing and midwifery. What makes our group unique is the diverse character of our membership and our interdisciplinary approach to researching current issues in human reproduction.



Our work focuses on the social study of a number of cutting-edge themes, including: cross-border reproductive travel; surrogacy; egg and mitochondrial donation; egg freezing; age and reproductive timing; genetic disorders and reproductive technologies; health, pregnancy and childbirth and the management of labour; men, infertilities, technologies and fatherhood; socio-psychological aspects of endometriosis; gay and lesbian parenthood; and ethnicity, religion and assisted conception. Research funding sources include the Economic and Social Research Council, Wellcome Trust, National Institute for Health Research, Foundation for Sociology of Health and Illness and the charitable sector. Most of our projects have a strong applied focus, designed to impact policy, service delivery and quality of care in reproductive health. Many of these projects therefore routinely involve representatives from practice, policy and patient and user organisations.

For more information about our activities consult our website:

<http://www.dmu.ac.uk/research/research-faculties-and-institutes/health-and-life-sciences/reproduction-research-group/reproduction-research.aspx>

SYMPOSIUM PROGRAMME

DAY ONE: POSTPONING CHILDBIRTH

Thursday, May 12th

10:00-10:10

WELCOME

Nicky Hudson, De Montfort University

Session 1: A demographic and medical concern

Chair: Nolwenn Bühler, De Montfort University

10:10-10:30

Childbearing intentions and the postponement and recuperation of fertility at older ages

Ann Berrington, University of Southampton

10:30-10:50

Reproductive ageing – a medical concern?

Susan Bewley, King's College London

10:50-11:10

Discussion

11:10-11:30

BREAK

Session 2: Choosing to delay? Questions of motherhood and timing

Chair: Cathy Herbrand, De Montfort University

11:30-11:50

No right time: Dis-synchronicity in narratives of postponing motherhood

Maud Perrier, University of Bristol

11:50-12:10

Older motherhood - purposeful delay or inadvertent retiming?

Irene Daly, De Montfort University

12:10-12:30

A misinformed choice? The realities and consequences of delayed childbearing

Emily Koert, Cardiff University/University of British Columbia

12:30-13:00

Discussion

13:00-14:00

LUNCH

Session 3: What about men?

Chair: Nicky Hudson, De Montfort University

14:00-14:20

What do men perceive to be the 'right time' for parenthood? Past literature and future explorations

Caroline Law, De Montfort University

14:20-14:40

Traversing the lifescapes of involuntarily childless older men

Robin Hadley, Independent Researcher

14:40-15:00

Discussion

15:00-15:15

BREAK

15:15-16:15

Round Table: Age and parenthood in the media

Chair: Lorraine Culley, De Montfort University

- *Kate Brian, Infertility Network UK*
- *Kirsty Budds, Keele University*
- *Tracey Mills, University of Manchester*
- *Sarah Norcross, Progress Educational Trust*

19:00

DINNER AT THE BELMONT HOTEL

DAY TWO: EXTENDING FERTILITY?	
Friday, May 13th	
Session 4: Frozen futures: egg freezing and motherhood	
Chair: Laura Spoelstra-Witjens, National Gamete Donation Trust	
9:30-9:50	"Compelled to try": Egg freezing and neoliberal governmentality <i>Kylie Baldwin, De Montfort University</i>
9:50-10:10	Banking on love: Enacting 'responsible' reproductive citizenship through egg freezing <i>Charlotte Kroløkke, University of Southern Denmark</i>
10:10-10:30	Discussion
10:30-10:50	BREAK
Session 5: Producing knowledge on reproductive aging	
Chair: Lorraine Culley, De Montfort University	
10:50-11:10	ARTs and the making of "old eggs" <i>Nolwenn Bühler, De Montfort University</i>
11:10-11:30	Aged mothers and impaired children: How the prenatal diagnosis of Down syndrome changed the perception of women's "reproductive age" <i>Ilana Löwy, CERMES & King's College</i>
11:30-12:00	Discussion
12:00-13:00	LUNCH
Session 6: Are ARTs anti-aging technologies?	
Chair: Nicky Hudson, De Montfort University	
13:00-13:20	Mitochondria, the AUGMENT technique and the reconfiguration of reproductive ageing <i>Cathy Herbrand & Nolwenn Bühler, De Montfort University</i>
13:20-13:40	Cells, bodies, reproduction and ageing <i>Joanna Latimer, University of York</i>
13:40-14:00	Discussion
14:00-14:10	BREAK
14:10-15:10	'FISH BOWL' Future directions and agenda setting Chairs: Irene Daly & Kylie Baldwin, De Montfort University
15:15	CLOSE

DAY ONE

CHILDBEARING INTENTIONS AND THE POSTPONEMENT AND RECUPERATION OF FERTILITY AT OLDER AGES

Ann Berrington

University of Southampton

A.Berrington@soton.ac.uk

This paper discusses recent evidence and explanations for educational differences in childbearing intentions, the timing of fertility and completed family size in the UK, Europe and United States. Since the 1970s there have been major shifts in the timing of fertility, associated with increased educational enrolment, female labour force participation, and declines in unintended fertility (for example as a result of increased efficient use of modern contraception). The postponement of childbearing in the life course has taken place alongside the deferment of marriage and other markers of the transition to adulthood such as residential independence. The extent to which the timing of parenthood, and its setting in terms of partnership status, are socially stratified differs considerably cross-nationally. In the UK and US, early childbearing and increased non-marital childbearing (both among cohabiting and unpartnered women) occur more often among women from more socio-economically disadvantaged backgrounds. Despite fertility intentions being fairly similar across educational groups, the extent to which these intentions are fulfilled differs according to socio-economic background, with childlessness increasing far more rapidly among those with higher levels of education, particularly for women. Recent demographic attention has focused on the extent to which fertility which has been postponed to later ages can be recuperated or “caught up”. This paper reviews recent evidence for the 1970 British Birth Cohort which suggests that health problems and finding and keeping a suitable partner are important reasons why positive intentions among men and women childless at 40 are not always fulfilled by age 46. The paper reviews the evidence and the potential role of reproductive technology in facilitating this process.

Ann Berrington is Professor of Demography and Social Statistics at the University of Southampton where she co-leads the Fertility and Family Research Group within the Centre for Population Change. Her research interests are concerned with transitions to adulthood, partnership and childbearing dynamics, and their association with inequalities across the life course. She is a member of the Office for National Statistics National Population Projections Expert Group and the United Kingdom Household Panel Scientific Advisory Group.

REPRODUCTIVE AGEING – A MEDICAL CONCERN?

Susan Bewley

King's College, London

sbewley@doctors.org.uk

Public health improvements, contraception, safe abortion and new assisted reproduction techniques have transformed reproduction in post-industrial societies. The basic physiology of gametes, menstrual cycles, pregnancy biology and menopause have not changed. Substantial shifts have been witnessed in the demography of family formation and childbearing particularly in maternal (and paternal) age. Yet no reproductive health outcomes improve with age. Whilst medicine has little expertise or authority to speak to social matters and public policy, nevertheless avoidable morbidity and mortality for mothers and babies must be brought to attention. New forms of suffering, human experimentation, exploitation and moral blindness may be seen in the clinic, especially when fertility myths abound. Of course, there are also opportunities for new means, meanings and forms of flourishing. Novel interdisciplinary approaches may be required to understand and ameliorate the harms of reproductive ageing.

Susan Bewley qualified in 1982, worked as an obstetrician for 30 years and has a law and ethics degree. Her main research interests are severe maternal morbidity and violence in pregnancy. She was a member of the 2013 NICE Fertility Guideline Group and chaired the 2014 NICE Intrapartum Guideline Development Group. She has observed the much-hyped successes and the less well recognised harms of assisted reproduction and has written about reproductive ageing, and why we need to take a public health, rather than technological, approach to the health of the next generation.

NO RIGHT TIME: DIS-SYNCHRONICITY IN NARRATIVES OF POSTPONING MOTHERHOOD

Maud Perrier

University of Bristol

Maud.Perrier@bristol.ac.uk

This presentation will argue that we urgently need a gendered and classed analysis of delayed fertility in order to problematize the 'don't leave it too late' public discourse that is currently framing the postponement of childbirth. Drawing on qualitative interviews with women who had children after 35, I address one of the key questions left unanswered by the literature to date: why are older mothers' reproductive choices, which are the outcome of middle-class notions of the 'right' time for motherhood, perceived in terms of their having waited too long? My research identified that the discourse of generational right time and the narrative of appropriately timed motherhood are in conflict with one another in my participants' accounts. According to the former, women should have children once they are educated, established in the labour market, financially and relationship settled, but the latter suggests that women should not have children too late since this may deprive their children of relationships with their grandparents and themselves of valuable care and support. I argue the impossibility of synchronizing these different biological, biographical, and generational right times for middle-class women in late modern societies needs to be recognized in policy and public responses to the postponement of parenthood.

Maud Perrier has taught gender studies in the School of Sociology, Politics and International Studies at the University of Bristol since obtaining her PhD from the Centre for Women's and Gender Studies at the University of Warwick in 2009. She has written about feminist theory and pedagogy, emotions, class and motherhood. She has published in Sociology, Sociological Review, Sociological Research Online, Humanities and Feminist Formations.

OLDER MOTHERHOOD - PURPOSEFUL DELAY OR INADVERTENT RETIMING?

Irene Daly

De Montfort University

irenee.daly@dmu.ac.uk

Over the last three decades, women in high resource countries have been having children at an increasingly older age. In doing so, it has been suggested that they expose themselves to the risk of age-related infertility. This trend has been attributed to educated middle-class women who are thought to be postponing motherhood so as to pursue further education and establish their careers. However, women's views on these issues have rarely been captured through empirical research. This paper seeks to address this omission by focusing on the views and attitudes of women who have yet to make the decision to have children. It seeks to provide a novel, more nuanced and psychologically grounded account about why women are waiting until they are older to have children.

The paper draws on 30 semi-structured interviews with university-educated childless women aged 28-32. These women did not consider themselves to be 'postponing motherhood'. Rather, they felt they had not yet passed developmental milestones, such as marriage, home ownership, or job stability, which they believed preceded childbearing. Passing these milestones indicated to women that they are adults, a status they consider necessary before considering themselves ready to be mothers. These results are discussed in the context and influence of the theory of emerging adulthood (Arnett 2000) as well as Neugarten's (1965) concept of social clocks. Ultimately it rejects the idea that delay is a choice, and argues that these phenomena would be better understood as reproduction 're-timed'.

Irene Daly is a Senior Lecturer in Psychology at DMU and a member of the Reproduction Research Group. Prior to her lectureship, she completed a PhD and Post-doc at the Centre for Family Research at the University of Cambridge. Her research focuses on the questions and problems arising from age-related infertility. She explores how individuals psychologically interpret social change, and how such change influences adult development. She is specifically interested in how such matters as fertility knowledge, risk perception, career development and the availability of reproductive technologies guide reproductive decision-making.

A MISINFORMED CHOICE? THE REALITIES AND CONSEQUENCES OF DELAYED CHILDBEARING

Emily Koert

University of British Columbia, Vancouver, BC

Cardiff University, Cardiff Fertility Studies Research Group, Cardiff, UK

emilykoert@gmail.com

Delayed childbearing is now a reality for many of today's women who are considering having children. This social trend reflects the challenging issue of the timing of childbearing and parenthood, set against the competing personal, social, and economic realities of women's lives and relationships. Unfortunately, these realities compete with the biological clock, as women's fertility declines with age. For an increasing number of women, the consequence of waiting too long is age-related infertility, higher risk pregnancies, smaller family sizes than intended, and for some, permanent childlessness. Research shows that there are significant gaps in women's knowledge and awareness of fertility, age-related fertility decline, and the risks related to older childbearing. Women also appear to overestimate the ability of assisted reproduction to compensate for age-related fertility decline, believing that they can resort to in vitro fertilization (IVF) if they have difficulties conceiving when they are ready. This research suggests that women may be making misinformed choices to postpone motherhood. Experts have called for fertility educational campaigns to address these knowledge gaps. But is education the key to combat the rising trend and consequences of delayed childbearing?

The results from a large, Canada-wide study of women's fertility knowledge, intentions, and beliefs and a study examining the effectiveness of an online fertility educational strategy will be presented. Findings from a qualitative study of 15 women's lived experiences of permanent childlessness after delayed childbearing will be used to illustrate the complex factors influencing women's decision to delay childbearing to generate additional discussion on what is needed to address this trend. As well as underscoring the need for social and political advocacy, recommendations will be made for clinical practice and future research.

Emily Koert is a Registered Psychologist with a PhD. in Counselling Psychology from the University of British Columbia in Vancouver, BC. Dr. Koert conducts research on women and men's reproductive health in collaboration with Dr. Judith Daniluk at the University of British Columbia. They conducted a large-scale study of Canadian men and women's fertility knowledge and developed an online educational strategy, MyFertilityChoices.com. Dr. Koert's dissertation research focused on the experience of women who are faced with permanent childlessness after delaying childbearing. She is currently a Visiting Researcher at Cardiff University in the Cardiff Fertility Studies Research Group.

WHAT DO MEN PERCEIVE TO BE THE 'RIGHT TIME' FOR PARENTHOOD? PAST LITERATURE AND FUTURE EXPLORATIONS

Caroline Law

De Montfort University

claw@dmu.ac.uk

The vast majority of research, discussion and debate regarding reproductive timings is concerned with women. This may overemphasise female responsibility, leaving men's positions and behaviours neglected. Despite a growing interest in men's experiences in relation to reproduction, the majority of research has been concerned with fatherhood, leaving numerous other aspects of reproduction, including desires for parenthood and pre-conception planning, neglected. Furthermore there is growing evidence that men too experience age-related fertility decline, making this topic particularly timely and worthy of sociological exploration.

The first part of this paper summarises empirical findings of existing research regarding the factors men identify as shaping their reproductive trajectories, including age, financial and material security, relationship circumstances and emotional readiness. An overview of key arguments and areas of debate will be provided including the ways in which reproductive trajectories are influenced by competing discourses of fatherhood, by pervasive assumptions about a normative life course and by a commitment to 'good' and moral parenting. The second part of the paper describes a current UK-based, sociological doctoral study into men's perceptions and intentions regarding reproductive timings. It discusses the rationale for framing the study within the philosophical framework 'Critical Studies of Men and Masculinities', an epistemological approach which arises from feminist theory, explores the gendered nature of men's lives, and seeks to challenge hegemonic masculinity and gendered power relations.

Overall, the paper identifies gaps in the literature on men and reproductive timings, and sets out how the doctoral study aims to address these gaps as well as its intended intellectual and empirical contribution to the field.

Caroline Law is a sociologist who has worked in social research for ten years, initially in the third sector and now in academia. Her research interests and expertise include qualitative research, the sociology of health and illness, reproduction and infertility, men and masculinities, endometriosis, discourse analysis, disability discrimination and equality and diversity. She has a BSc in Sociology, an MSc in Social Research Methods and is currently undertaking a PhD on men and reproductive timings.

TRAVERSING THE LIFESCAPES OF INVOLUNTARILY CHILDLESS OLDER MEN

Robin A. Hadley

Independent Researcher

rahadley7.8@gmail.com

The global trend of a declining fertility rate and an increasingly ageing population has been extensively reported. Childless men are, compared to women, absent from geographical, gerontological, masculinities, psychological, reproductive, and sociological research. These fields have mainly focussed on fatherhood, family and women, with the fertility intentions, history and experience of older men being discounted. The failure to fulfil the status of parenthood may lead to a complex form of bereavement and a significant challenge to individual and cultural identity. This qualitative study used a pluralistic framework drawn from the biographical, feminist, gerontological, and life course approaches. A thematic analysis was applied to the semi-structured interviews conducted with 14 men aged between 49 and 82 years. The analysis highlighted the complex intersections between involuntary childlessness and agency, biology, relationships, and socio-cultural structures. This study challenges the stereotype that the social, emotional and relational aspects of involuntary childlessness do not affect men. The men's attitude to fatherhood changed with age and centred on the theme of the '*social clock*' that revealed the synergy between an individual and societal mores surrounding parenthood. The participants' narratives demonstrated the diverse elements that affected the men's experience of involuntary childlessness: upbringing, economics, timing of events, interpersonal skills, sexual orientation, partner selection, relationship formation and dissolution, bereavement, and the assumption of fertility. The importance of relationship quality was highlighted in the social networks of both those with and without partners. Awareness of '*outsiderness*' and a fear of being viewed a paedophile were widely reported.

Robin Hadley was awarded his PhD in Social Gerontology by Keele University in December 2015. His PhD study, into the experiences of involuntarily childless older men, has received much international attention. Robin's previous careers included roles as counsellor, deputy technical manager, scientific and technical photographer, kitchen assistant, and bar tender. Robin's training as a counsellor led him to research into the desire for fatherhood in involuntarily childless men as part of his MA at the University of Manchester. He then followed this up with a self-funded MSc exploring the levels of broodiness in females and males, parents and non-parents.

ROUND TABLE: AGE AND PARENTHOOD IN THE MEDIA

Kate Brian

London Representative for Infertility Network UK

katebrian@infertilitynetworkuk.com

Kate Brian is the London Representative for Infertility Network UK and Editor of the Journal of Fertility Counselling. She is also a member of the HFEA. Kate is an author and journalist and has written four books about IVF. Her two children were both IVF babies.

Kirsty Budds

Keele University

k.budds@keele.ac.uk

Kirsty Budds is currently a lecturer in psychology at Keele University. She is a critical social psychologist with research interests in women's reproductive health, reproductive timing, and experiences of the transition to parenthood and how these are shaped by cultural prescriptions of 'good' motherhood. Her PhD examined media representations of 'delayed' motherhood and explored the experiences of first-time mothers over 35.

Tracey Mills

University of Manchester

tracey.mills@manchester.ac.uk

Tracey Mills is a lecturer in midwifery at the School of Nursing, Midwifery and Social Work at the University of Manchester. She has research and teaching interests in the care of women at risk of pregnancy complications, driven by extensive NHS clinical experience in high-risk intrapartum and antenatal care. Her PhD focussed on laboratory based investigations of placental vascular function in pre-eclampsia and fetal growth restriction. Current research focuses on applied research, utilising mixed methods to improve care for women advanced maternal age, following stillbirth or neonatal death, and improving outcomes for obese pregnant women.

Sarah Norcross

Director of the Progress Educational Trust (PET)

snorcross@progress.org.uk

*Sarah Norcross is Director of the Progress Educational Trust (PET), a charity that works to improve the choices for people affected by infertility and genetic conditions and promotes the responsible application of science. She is also Commissioning Editor of the charity's flagship publication **BioNews** – www.bionews.org.uk – and Co-Chair of the campaigning organisation Fertility Fairness. She is a Member of the Human Fertilisation and Embryology Authority's National Donation Strategy Group and Lifecycle campaign, and of the Association of Fertility Patient Organisations. Previously, she worked as a Barrister.*

DAY TWO

‘COMPELLED TO TRY’: EGG FREEZING AND NEOLIBERAL GOVERNMENTALITY

Kylie Baldwin

De Montfort University

kbaldwin@dmu.ac.uk

It has been suggested that social egg freezing is another example of the medicalisation of women's bodies. However the specific dimensions of this technology, particularly its transformative possibilities, and the way it has the potential to incite action on behalf of the potential user also reflect an intensified process of medicalisation which Clarke et al. (2003, 2010) have referred to as biomedicalisation. Where the concern of medicalisation was the reinstating of normal reproductive ability via IVF, biomedicalisation takes as its focus the transformation of bodies and lives through technologies which go beyond restoring 'normal functioning', such as egg donation, womb donation and egg freezing, and by doing so provide new 'customised', 'individualised bodies' (Clarke et al. 2003, p.169). A further significant aspect of biomedicalisation is the focus not on illness, disability and disease as matters of fate, but instead as conceptualising health as the ongoing management and treatment of risks through screening, classifications, risk assessments and the commodification of health as a lifestyle ideal (Clarke et al. 2003, 2010).

Drawing on data collected in 31 interviews with female users of social egg freezing technology this paper will argue that through new technologies such as egg freezing and ovarian reserve tests but also through self-governance, individuals are encouraged to engage in self-monitoring and surveillance when facing the 'threat' of reproductive ageing. This paper will explore how the availability of these technologies and the way they have become utilised for self and lifestyle improvement purposes reflects a biomedical governmentality which calls for individuals to 'know thyself' and can be seen as being (re)produced by neoliberal discourses which promote self-action, taking charge of one's health. Furthermore this paper will discuss how such, messages of responsibility for oneself and one's future lead some women to feel 'compelled to try' egg freezing technologies in the same way that Sandelowski (1991) originally characterised the 'need' felt by sub fertile women to engage in IVF treatment.

Kylie Baldwin is a lecturer in medical sociology at De Montfort University and a member of the Reproduction Research Group. She recently submitted her PhD which explored women's experiences of social egg freezing in the context of debates surrounding reproductive 'choice' and 'delayed motherhood'. Her research interests and expertise include qualitative research methods, medical sociology, reproductive ageing and the timing of parenthood. She also convenes the British Sociological Association's Human Reproduction Study Group.

BANKING ON LOVE: ENACTING 'RESPONSIBLE' REPRODUCTIVE CITIZENSHIP THROUGH EGG FREEZING

Charlotte Kroløkke

University of Southern Denmark

charlottekro@sdu.dk

The promise of egg freezing for women's fertility preservation has entered feminist debate in connection with medical and commercial control over, and emancipation from, biological restrictions of reproduction. This article draws on semi-structured interview data with sixteen egg freezers from the mid-west and east coast regions of the United States of America. Rather than freezing to balance career and 'have it all', the women in this cohort were largely 'freezing for love' and in the hopes of having a 'healthy baby.' This finding extends upon feminist debate and challenges existing bioethical concerns about egg freezing by drawing on egg freezers' own voices and the neoliberal positioning of the reproductive body. Together, they cast egg freezing as neither liberation nor oppression or financial exploitation, but rather, as an enactment of 'responsible' reproductive citizenship, a reinforcement of compulsory coupledness and the genetic relatedness of offspring.

Charlotte Kroløkke is Professor at the University of Southern Denmark with special responsibilities in reproductive medicine and mobility. Charlotte's work is theoretically informed by feminist cultural analysis, sociology and medical anthropology and her work has been published in various journals such as The Journal of Consumer Culture, Women's Studies in Communication, European Journal of Women's Studies, and Text and Performance Quarterly.

ARTS AND THE MAKING OF “OLD EGGS”

Nolwenn Bühler

De Montfort University

nolwenn.buhler@dmu.ac.uk

This paper is about the production of knowledge on ovarian ageing. It identifies some of the scientific milestones marking the emergence of “old eggs” (Frieze et al. 2006) and focuses on the role assisted reproductive technologies (ARTs) played in these processes. Historically, assisted reproductive technologies and age extension strategies have more in common than might be thought at first sight. Although each targets an opposite end of the life span, rejuvenation and reproductive technologies are originally rooted in the same project of “improving the bodily bases of human life” (Squier 2004: 148) through technological and chemical intervention. The “postmenopausal mother” is the striking result of this on-going traffic between reproductive and anti-ageing, or regenerative, technologies, and illustrates how some ARTs may be used to extend fertility and make older bodies reproductive by targeting ageing body parts. But the question of where to direct biotechnological intervention without a precise understanding of how ageing processes affect fertility, is one which animates the efforts of reproductive biologists to identify the locus of ageing – body parts, cells, cell components or processes, environmental factors – in order to be able to act on it, slow it down, or even reverse it.

After situating the emergence of “ageing ovaries” within reproductive science, I will focus on the specific role of egg donation programmes in locating conceptualisations of ageing within eggs. Used as an “in vivo model” (Navot et al. 1991), egg donation illustrates the proximity between the logic of the clinic, which aims to optimise success rates, and the logic of research, whose aim is to identify the locus of ageing in order to intervene in it. I will highlight the impact of these programmes on the definition of reproductive ageing and the orientation of further research. Finally, I will question the effects of the distinction between chronological and biological age produced through the making of “old eggs”.

Nolwenn Bühler is an anthropologist and Science and Technology Studies scholar. She currently works as a research fellow at De Montfort University. Previously she spent a year in the Gender and Women’s Studies Department of the University of California, Berkeley, and worked for three years in the Research Project “Fertility and Family in Switzerland” at the University of Zurich. Her research interests focus on the production of scientific knowledge on reproductive ageing and the role ARTs play in it, on how the reproductive and regenerative socio-technical projects articulate, and on the shifting boundaries of nature and culture in biotechnologies and biomedicine.

AGED MOTHERS AND IMPAIRED CHILDREN: HOW THE PRENATAL DIAGNOSIS OF DOWN SYNDROME CHANGED THE PERCEPTION OF WOMEN'S "REPRODUCTIVE AGE"

Ilana Löwy

INSERM, Paris

lowy@vif.cnrs.fr

My talk will follow the history of linking Down syndrome with "older mothers", and the changing perception of this condition. It will argue that the diagnosis of trisomy 21 was the main reason for the extension and generalization of prenatal diagnosis, the introduction of prenatal screening, and the shift from the perception of small group of women as being "at risk" of giving birth to a disabled child, to the definition of all the pregnant women as being at such a risk. "Down risk" also played a key role in the debates on ideal age of childbirth, age limits of ART, and discussions about disability and prenatal diagnosis. Finally in the 21st century, Down syndrome, and shift in mean age of first maternity, plays an important role in the diffusion of non-invasive prenatal diagnosis (NIPT).

Ilana Löwy is a senior researcher emerita at INSERM, Paris. Trained as a biologist, she then retrained as a historian of science and medicine. Her main research interest are relationships between laboratory sciences, clinical medicine and public health, with a special interest in intersection between gender studies and biomedicine in areas such as female cancers, contraception or the medicalization of pregnancy. She is studying now the history of birth defects and prenatal diagnosis, with a special focus on links between prenatal diagnosis, clinical genetics and the development of new genetic technologies.

MITOCHONDRIA, THE AUGMENT TECHNIQUE, AND THE RECONFIGURATION OF REPRODUCTIVE AGEING

Cathy Herbrand & Nolwenn Bühler

De Montfort University

cathy.herbrand@dmu.ac.uk

Over the past decade, mitochondria have become the focus of increased attention in various spheres, primarily in scientific research but also in the media and in the context of socio-cultural practices. The existence of these cytoplasmic organelles, which produce cell energy and possess their own maternally inherited DNA, has been highlighted in mitochondrial replacement techniques, 'anti-ageing' products, genealogical research, and fertility treatments. This paper tracks the 'bio-objectification' of mitochondria, that is, the processes through which new life forms are created and challenge conventional boundaries between for example, human and animal, living and dying – and therefore disrupt everyday meanings of 'life' (Webster 2012).

In this talk, we achieve this by focusing on the new 'AUGMENT' technique, a technology which is aimed at 'rejuvenating' older eggs by injecting them with mitochondria taken from the immature eggs of the same woman. Commercialised by the US-based start-up company *OvaScience*, AUGMENT raises great promise with regards to reproductive ageing, with the *Mail Online* recently describing it as "Turbocharged IVF that'll help older women conceive". This example is discussed in relation to insights from two empirical research fields: one on reproductive ageing, the other on the use of reproductive technologies in the context of mitochondrial disorders. We examine how mitochondria contribute to the reconfiguration of socio-biological processes in the field of reproductive and regenerative biology. By showing how such biotechnical manipulations of mitochondria challenge current understandings of reproductive ageing, we argue that they are part of wider efforts to redirect and transform living processes by acting on reproductive ageing at the cellular level.

Cathy Herbrand is a Senior Lecturer in Sociology in the Reproduction Research Group. She is also an appointed member of the Belgian Advisory Committee on Bioethics. Her research interests lie in the sociological and anthropological study of family, biotechnologies and genetics, with a particular focus on reproductive decision-making, multi-parenthood and gender issues. Her current research focuses on reproductive choices in the context of mitochondrial disorders. The aim of the research is to gain a better understanding of the interactions between scientific progress, policies and people's lives through the analysis of the UK debates surrounding mitochondrial replacement techniques and the exploration of reproductive choices amongst 27 families affected by mitochondrial disorders.

CELLS, BODIES, REPRODUCTION AND AGEING

Joanna Latimer

University of York

joanna.latimer@york.ac.uk

In this paper I pose some questions drawing on my study of ageing and biology. I think through the social and cultural significance of how biologists imagine and reimagine the causes and effects of ageing and its relation to reproduction. I show how there is an interesting elision of cellular senescence and organismal ageing, and examine how this elision enacts associations between ageing bodies and a loss of reproductive power that performs ageing as the decline of potency and social value. I then question whether under these circumstances ART can be thought of as an anti-ageing technology.

Joanna Latimer has just moved from Cardiff to the chair of Sociology, Science and Technology at the University of York. Her research has been concerned with the biopolitics and existential affects of how medicine and science are done. Earlier work, including 'The Conduct of Care, Understanding Nursing Practice', sought to illuminate the organization and identity politics enacted at the bedside of older people in acute medicine, to show how care is becoming increasingly difficult in institutions governed more and more by strategic as well as biomedical technologies. More recent work such as 'The Gene, the Clinic and the Family: Diagnosing Dysmorphology, Reviving Medical Dominance' focussed on how the bodies of babies and children and their relations are being reinscribed as expressive of genetic syndromes, with the riskiness of reproduction intensified as a site of biopolitics. Joanna's current work tracks 'ageing' through post-genomic biology and across to global politics around possibilities for postponing ageing and the continuous reinvigoration of life itself. As well as contributing to contemporary social theory, by for example, interrogating human-non-human animal relations, she also edits Sociology of Health and Illness and is on the editorial board of The Sociological Review.

CHAIRS

Lorraine Culley

De Montfort University

lac@dmu.ac.uk

Lorraine Culley is Emeritus Professor of Social Science and Health at De Montfort University, Leicester, UK and a freelance qualitative researcher. Her research interests encompass social and political aspects of infertility and reproductive technologies; ethnic diversity and healthcare, and user perspectives in health. Key studies in reproductive health include an NHS funded study of access to fertility services for British South Asian communities (Asfert); an ESRC funded study of perceptions of egg and sperm donation (Gamdon); an ESRC funded study of transnational reproduction (Transrep) and an ESRC project on the impact of endometriosis on couples (Endopart).

Nicky Hudson

De Montfort University

NHudson@dmu.ac.uk

Nicky Hudson is Reader in Medical Sociology and leads the Reproduction Research Group, a multi-disciplinary research group based in the Faculty of Health and Life Sciences at De Montfort University. Her research relates to social aspects of infertility and reproduction and she has completed a number of studies in this area funded by the Economic and Social Research Council, the Department of Health and local NHS trusts. In particular she is interested in the ways people negotiate assisted reproductive technologies and the implications for subjectivities and social relations. Her work also focuses the sociology of chronic illness and many aspects of her research have a strong emphasis on ethnic diversity and inequalities.

Laura Spoelstra-Witjens

National Gamete Donation Trust

laura.witjens@ngdt.co.uk

Laura Spoelstra-Witjens joined the National Gamete Donation Trust (NGDT) in 2004 following her own egg donation. She's now the Chief-Executive of the NGDT whose objectives are:

- *Supporting and empowering sperm, egg (gamete) and embryo donors. It works with potential recipients, UK licensed fertility clinics, the media and support organisations to raise awareness of the need for gamete donors.*
- *Managing the Donor Conceived Register to enable people conceived through donated sperm or eggs, their donors and half-siblings before August 1991 to exchange information and, where desired, to contact each other.*
- *Managing the National Sperm Bank.*

ATTENDEES

Johanna Kostenzer

Department of International Health & Social Management, Management Center Innsbruck, Austria

johanna.kostenzer@mci.edu

Johanna Kostenzer is currently a visiting researcher with the Reproduction Research Group, De Montfort University (May-June 2016). She is teaching and research assistant in the department of International Health and Social Management at Management Center Innsbruck and she is also a PhD Candidate in Political Science at University of Innsbruck, Austria. Her research project "Prenatal Sex Selection and the International Agenda" aims at analysing the emergence of prenatal sex selection on the international community's agenda. Johanna studied in Innsbruck, Oslo and Charleston, and was previously a visiting PhD researcher at Karolinska Institutet in Stockholm. She is a voluntary board member of the UN Women National Committee Austria.

Wendy Norton

De Montfort University

WNorton@dmu.ac.uk

Wendy Norton is Senior Lecturer/Researcher in Health and Social Care in the School of Nursing and Midwifery at De Montfort University. She has over 20 years' experience in the field of nursing, specialising in gynaecology, sexual health, and assisted reproduction. She is a Steering Committee Member of the Royal College of Nursing Women's Health Forum. Her research interests include gender, sexuality, sexual health and HIV, reproduction, and experiences of assisted reproductive technology use amongst members of LGBT communities. Wendy's PhD is an exploratory study of gay men seeking surrogacy to achieve parenthood.

Jess Turner

De Montfort University

jessica.turner@dmu.ac.uk

Jess Turner is a Research Assistant for the Reproduction Research Group within the School of Applied Social Sciences, De Montfort University. Jess has a BA in Sociology and is currently studying for a Masters in Research in Applied Health Studies. Her research interests include women's health and reproduction, reproductive technologies and the experience of living with chronic illness. Her role as research assistant includes bid-writing, organising conferences and seminars, data collection and analysis and supporting the work of the Reproduction Research Group.

Christina Weis

De Montfort University

christina.weis@posteo.de

Christina Weis is a cultural anthropologist with an interest in medical anthropology, gender, social aspects of in/fertility, reproductive technologies, reproductive rights and post-socialism. She is a member of the Reproduction Research Group at De Montfort University and currently undertaking her PhD research on commercial gestational surrogacy in Russia. She has previously conducted ethnographic research on female labour migration and transnational motherhood in the Republic of Moldova.

Reproduction Research Group
Faculty of Health and Life Sciences
0.23 Hawthorn Building
De Montfort University
LE1 9BH Leicester

<http://www.dmu.ac.uk/research/research-faculties-and-institutes/health-and-life-sciences/reproduction-research-group/reproduction-research.aspx>



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