



**EUCCONET/SOCIETY FOR LONGITUDINAL AND LIFE COURSE  
STUDIES  
INTERNATIONAL CONFERENCE**

**Childhood and beyond: tracing cohorts across the  
lifecourse**

**FIAP Jean Monnet, 30 rue Cabanis, 75014, Paris, France  
29<sup>th</sup> – 31<sup>st</sup> October 2012**

**ABSTRACT BOOK**

## Day 1 – Monday 29<sup>th</sup> October 2012

**Keynote**                      **Socio-economic inequality in childhood and beyond: international evidence from cohort studies**

*Jane Waldfogel – Columbia University, USA*

The growing number of countries with large cohort studies offer an unprecedented opportunity for comparative research. A topic that colleagues and I have begun to explore is to what extent the sizable gaps in development that exist between children from different socioeconomic status (SES) groups in the US are also present in other countries and to what extent the mechanisms explaining these gaps are similar or different across countries. There are of course numerous challenges in carrying out this kind of research – in particular, challenges having to do with data access and comparability, and challenges having to do with causal inference. Nevertheless, this type of research also offers great promise. I illustrate these points with results from comparative analyses of SES gaps in child development using cohort data from Australia, Canada, the United Kingdom, and the United States.

**Symposium**      **A ‘healthy start to life’? Four contemporary child cohort studies**  
**Convenor: Susan Morton**

**The Growing Up in New Zealand Study** (*Susan Morton, University of Auckland, New Zealand*);

**The Growing Up in Australia Study** (*Polly Atatoa-Carr, University of Auckland, New Zealand*);

**The Growing Up in Ireland Study** (*James Williams, Economic and Social Research Institute, Ireland*);

**The Millennium Cohort Study** (*Lucinda Platt, Institute of Education, UK*)

This symposium abstract assumes that the 4 studies involved in this collaborative approach will present a series of linked presentations to address the following abstract. Each cohort study will concentrate on one particular aspect of the comparative approach, but all studies and presenters will contribute to the high level comparisons as below.

Defining how to characterise a “healthy start to life” for infants is challenging both within and across populations. Often proxy measures of “health” are used to facilitate international comparisons. These proxy measures are often chosen because of their known associations with measures of health and wellbeing beyond infancy, and because the statistics are routinely collected and readily comparable. Notably for populations where perinatal mortality is low these measures usually include birth weight (rates of low birth weight in particular) as well as breastfeeding and immunisation rates. The comparisons are informative but they often do not provide us with an understanding of the multiple factors that may contribute to, or explain the population differences. We propose a comparative methodological approach to attempt to understand what factors might enable infants to have a “healthy start to life” by using information from four contemporary child cohort studies. We will use longitudinal information collected from children and families who are part of the Growing Up in New Zealand (GUiNZ), Growing Up in Australia (LSAC), Growing Up in Ireland (GUI) and the Millennium Cohort Study (MCS). The four cohort studies have used a similar life course conceptual approach to the design and collection of longitudinal information, and although time of measurement varies slightly between studies comparable measures have been collected which will allow harmonization of data to facilitate comparisons over the first year of life particular. All studies are large and appropriately powered to undertake life course analyses to elucidate pathways to health outcomes which consider multiple explanatory variables interacting over time. GUiNZ began in 2008 and enrolled a cohort of 6844 children from before birth. The children have been followed up on 3 occasions since (up to 2 years). MCS began in 2001 and recruited a cohort of 19,517 children in their first year of life - the children have now been followed up on several occasions until they are 12

years of age. GUI began in 2008 and enrolled an infancy cohort of 11,100 children. The children have been followed up again when they were 3.5 years of age. LSAC began in 2004 and recruited an infancy cohort of 5107 children who have also been followed up on several occasions since. All cohort studies had retention rates at the first point of follow up that were approximately 90% or better.

Comparisons across cohorts will begin with a descriptive comparison of distributions and patterns of proxy child health measures in the first year of life (including birth weight distributions, feeding in infancy, breastfeeding specifically and immunisation rates) and then compare these measures according to the patterns of parental health-related behaviours (smoking, alcohol intake), family and household structures (parental relationships, family income and income changes, housing tenure and household mobility), and the societal and policy contexts (employment and/or parental leave, family tax/support policies) in which the children are growing up (table 2). The longitudinal and individual and family level information available from the four studies should allow insights to be drawn about family, societal and policy level factors that contribute to differences seen in markers of early child health beyond ecological associations. This longitudinal and comparative evidence will be valuable to consider how best to enable all children to have a healthy start to life across all the populations being compared.

#### **For children living in persistent low income, are mothers' social assets associated with better social, emotional and behavioural outcomes?**

*Morag Treanor, University of Edinburgh, UK*

This paper examines the association between mothers' social assets and children's social, emotional and behavioural (SEB) outcomes for children living in persistent low income. The dependent variable (SEB) is measured by the Stress and Difficulties Questionnaire, carried out at age 4/5 years. The independent variables comprise an index of social assets, permanent income divided into quintiles (the lowest income quintile is conceptualised as 'persistent low income') and standard control variables generated from the literature review. The results show that low income is associated with lower social assets and lower SEB development in children; however, mothers living in persistent low income but who have high social assets are significantly associated with higher levels of SEB development in their children, an interaction that is not significant for any other income quintile. Additionally, many of the socio-demographic variables assumed to be important for children's SEB outcomes in the literature, such as family composition, young motherhood and maternal ethnicity, become insignificant once permanent income and mothers' social assets are taken into account in the model.

#### **Temperamental irritability in early infancy predicts children's inhibitory control at age 6**

*Alexandru Agache, Axel Schölmerich et al, Ruhr University, Germany*

This study investigates how postnatal maternal stress and mother - child activities influence changes in temperamental irritability during early infancy. As a long-term outcome, the development of inhibitory control and emotional problems at age six was assessed using longitudinal data on mothers and their children from the German Socio Economic Panel Study (GSOEP, total N of dyads= 519). Data was based on mothers reports assessed at three time points: within the first year after birth, at age three and at age six (cohorts born 2002, 2003 and 2004). Analyses using latent differences score models showed intra-individual increases of irritability (infants experiencing more frustration, negative emotions and lower levels of activity) from age one until age three; those children with lower baseline levels experienced the strongest increase in irritability. Levels of inhibitory control (resistance to temptations/ attention focusing and persistence) increased from age three until age six. Higher baseline levels and higher increase rates in irritability hindered the development of inhibitory control and were associated with more emotional problems (subscale of

the Strength and Difficulties Questionnaire) at age six. Perceived maternal stress within the first three months after birth had a direct positive impact on the development of child irritability. Higher frequency of mother-child activities at age three was not associated with postnatal stress and buffered the increase of irritability. Interestingly, the buffering effect of mother-child activities was only found when considering dyadic-didactic activities (i.e., reading/telling stories, painting and singing to the child) and for children where mothers did not report them to watch TV by themselves, while activities like going to the playground, taking walks, visiting friends and watching TV together had no effect. For all analyses, effects were invariant across gender. Overall, this study points to the long-term effects of the quality of shared environment during infancy for the development of temperamental qualities, inhibitory control and healthy emotional development.

### **Behaviour problems in children with a developmental disability: associations with family characteristics. Evidence from British longitudinal studies**

*Vasiliki Totsika, Bangor University, UK*

Children with a developmental disability (intellectual disability [ID] and/or autism spectrum disorder [ASD]) present very high levels of behaviour problems (e.g., hyperactivity, conduct problems). We explored risk and resilience factors in the family environment of children with a developmental disability. Findings will be presented on the (a) longitudinal association between maternal psychological well-being and behaviour problems in children with ASD, (b) longitudinal effects of parenting practices on the behaviour problems of children with an ID. Longitudinal analyses were based on data available through the British Millennium Cohort Study (MCS). Findings suggested that (a) maternal well-being (positive and negative) is a significant risk factor for high levels of behaviour problems in children with an ASD by 5 years of age, but the relationship is not bidirectional; (b) the relationship between child and parent appears to be more important for later behaviour problems compared to more practical parenting practices (e.g., discipline). Results will be discussed in relation to system-wide interventions to decrease or prevent high levels of behaviour problems in children with a developmental disability.

### **Longitudinal association between early life socio-environmental factors and attention function at age 11 years**

*Joan Forn, Maties Torrent et al, Center for Research in Environmental Epidemiology (CREAL)*

Prenatal and early-life exposures can affect the course of children's neuropsychological development well into pre-adolescence, given the vulnerability of the developing brain. We aim to determine social and environmental exposures in early childhood that may be associated with attention function of 11-year-olds. We measured attention function using the continuous performance test-II (CPT-II) on 393 11-year old children from the Menorca's birth-cohort within the INMA-project (Spain), and pre-selected a list of socio-environmental observations taken when they were up to 4 years of age. We found that earlier socio-environmental characteristics, such as parental social class, educational level, and maternal mental health are associated with later inattentive and impulsive symptomatology. In addition, omission errors were higher in children with atopy, and lower in those whose mothers took dietary supplementation with folic acid and vitamins during pregnancy. Breastfeeding played a protective role against commission errors, while higher DDE and PCBs levels at age 4 were associated with slow speed response. Our findings suggest that a number of life socio-environmental factors during prenatal life and early childhood, such as socio-demographic characteristics, breastfeeding, maternal nutritional supplementation with folic acid and vitamins, and exposure to some organochlorine compounds may influence attention function during pre-adolescence.

**Convenor: Jeylan Mortimer****Adolescent adaptation during the Great Recession***Jeremy Staff, Monica Kirkpatrick et al, Penn State University, USA*

We use twenty 8th and 10th grade cohorts (from 1991 to 2010) from the ongoing Monitoring the Future (MTF) study to examine how the current economic downturn is affecting the health and social development of teenagers in the United States. We consider whether youth adjustment and achievement (i.e., loneliness, self-esteem, depressed mood, risk taking, aggression, and grade point average) worsened during the recession. We also examine adolescent involvement in paid work, as well as volunteering and civic engagement, exercise, and sports participation. Since some population subgroups are more vulnerable to economic downturns than others, we consider the moderating role of sociodemographic factors (i.e., gender, race/ethnicity, family structure, and parent(s) education). Many aspects of the health and social development of teenagers appear not to be directly affected by the "Great Recession." Paid work during the school year, however, has declined, and is particularly low among black and Hispanic youth. Declining employment has the potential to reduce youth's opportunities to build human capital and learn important life skills, but also lessens exposure to the risks associated with paid work in adolescence.

**The effects of parental support on the transition to adulthood***Teresa Swartz, Jeylan Mortimer, Heather McLaughlin, University of Minnesota, USA*

Some research suggests that parental support during the transition to adulthood may be partially responsible for a "failure to launch" and achieve independence. Parental assistance is more forthcoming when young adults are enrolled in school—serving as scaffolding towards human capital building—or when young people have encountered negative life circumstances (e.g. serious illness/injury, work problems, crime victimization, divorce)—serving as a safety net in hard times (Swartz, Kim, Uno, Mortimer, and O'Brien 2011). Yet it is unknown whether parental support in young adulthood, even under these safety net or scaffolding circumstances, leads to successful transitions into adult roles. We use data from the longitudinal Youth Development Study to examine whether parental support in young adulthood (mid-twenties to early thirties) affects educational and economic attainment. Findings suggest that net of a rich set of socio-demographic and family control measures, parental scaffolding assistance, measured as parents paying for educational expenses, does increase educational attainment. However, the effects of the parental safety net are more complicated. Although parental safety nets decrease financial stress in the short term, evidence from this study suggests that they do not reduce threats to socioeconomic attainment, and may even exacerbate problems.

**Intergenerational transmission of worklessness: the role of individual agency as a potential protective factor***Ingrid Schoon, Kathryn Duckworth et al, Institute of Education, UK*

In the aftermath of the current 'Great Recession' unemployment has risen to its highest level since the 1990s. Young people between age 16 and 24 are most heavily affected, especially those from disadvantaged backgrounds. This paper examines long-term consequences of parental worklessness on young people's transition from school to work, using data from the Longitudinal Study of Young People in England (LSYPE), a panel study of just over 15,000 young people born between September 1989 and August 1990. We assess whether parental worklessness between 2004 and 2008 is associated with young people's own experiences in the labour market and their attitudes towards work and education, comparing young people in persistent workless households, and those whose

parents lost jobs during 2007/8. Findings suggest a dramatic increase in young people not engaged in education, employment or training (NEET) between ages 16 to 18/19. Parental worklessness is significantly associated with young people's education and work trajectories, but not with their aspirations. Even though young people growing up with workless parents express a relatively positive outlook to the future and high educational aspirations, they leave full-time education earlier than those with two employed parents, and are more likely to become NEET.

### **Love and work: work characteristics and social support as predictors of wellbeing**

*Stephen Stansfeld, Martin Shipley et al, Queen Mary University London, UK*

Subjective wellbeing is currently of interest as a policy outcome for judging a nations' progress instead of GDP. Hedonic wellbeing includes subjective perceptions of mood such as happiness and cognitive judgments of life satisfaction without negative feelings. This study uses data from the Whitehall II Study of 5182 UK civil servants to examine domains of work and personal relationships and their impact on wellbeing. The psychosocial work environment measured by Karasek's Job Strain Questionnaire and perceived social support at Phase 1 were used to predict wellbeing measured by the Affect Balance Scale at Phase 2 adjusting for confounding factors. In women, confiding/emotional support, negative aspects of close relationships, job strain and work social support predicted affect balance score in fully adjusted models. In men, confiding/emotional support, practical support, decision latitude, job strain and work social support predicted affect balance scale in fully adjusted models. Job demands did not predict affect balance scale score in either men or women. Overall, the results suggest that both work and personal social support are powerful predictors of subjective wellbeing and policy to promote wellbeing should aim at improving the quality of these areas of everyday life.

### **Occupational exposures in mid-life and quality of life after labour market exit**

*Loretta Platts, Gopalakrishnan Netuveli et al, Imperial College London, UK*

Physical working conditions exert a long-term influence on health, which suggests they might influence quality of life indirectly via their effect on health. Accordingly, we analyse whether long-term effects of physical working conditions upon quality of life are mediated by health status in the French Gazel cohort of employees of the national gas and electricity company (EDF-GDF). Quality of life was measured in 2009 by the CASP-19 scale; administrative data and questionnaire responses indicate exposures to chemicals (1956-1998), ergonomic strain (perceived strain in 1989/1990 and retrospectively over the whole career) and physical danger (perceived risk in 1989/1990 and accident episodes 1978-2009). Quality of life was regressed onto each physical occupational exposure after controlling for socio-demographic variables (age, age-squared, ESeC social class and occupational grade). Physical and mental health in 2007, measured by the Short Form Health Survey (SF-36), was subsequently introduced to observe any mediation effect. No associations were found between occupational exposures to chemicals and quality of life in retired men after the introduction of socio-demographic controls. However, men with greater exposures to ergonomic constraints or physical danger at work had poorer quality of life after retirement. These associations disappeared once health was added to the model. The study suggests that physical occupational exposures in mid-life have consequences for quality of life after retirement.

### **Educational trajectories and wellbeing: a lifecourse perspective**

*Andrew Jenkins, Richard Wiggins, Institute of Education, UK*

Across the European Union there is growing policy interest in the influence of adult learning on a range of outcomes, notably health and wellbeing. However, much of the research to date has tended to focus on younger adults and the immediate benefits of course participation. The longer term outcomes, such as the potential of accumulated learning experience for enriching later life have been neglected. Our research adopts a lifecourse approach to participation in learning and the potential benefits of learning. We concentrate on obtaining qualifications in mid-life, that is between the early 30s and age 50, as the measure of learning participation.

We use data from the National Child Development Study (NCDS), a large-scale survey containing information on all those born in Britain in one week in 1958. Follow-up data collection has taken place at various points in childhood and adulthood, most recently at age 50. Wellbeing at 50 was analysed as an outcome in structural equation models. The estimated models show how the acquisition of qualifications in mid-life enabled individuals to obtain higher-status jobs which in turn contributed to higher wellbeing at age 50. We also investigated gender differences. Women in this cohort were more likely than men to obtain qualifications in mid-life. They were more likely to 'upgrade' that is to increase the highest level of qualification held. The wellbeing benefits of obtaining qualifications in mid-life were also greater for women than for men. Our results reveal the extent to which engagement in learning has an impact on wellbeing at 50 and the pathways through which it does so.

### **Romantic Relationships and the Life Course: Does having a partner make people happy?**

*Sandra Buchler, Chair of Sociology I, Otto-Friedrich-University of Bamberg; Michele Haynes and Janeen Baxter, Institute for Social Science Research, The University of Queensland*

At the heart of all relationship status choices, transitions and patterns are romantic relationships, which are generally considered to be highly emotional and intimate. Despite this, much research investigating the relationship between marital status and well-being overlooks the emotive reality of romantic relationships. Indeed, intimate relationships have been found to be one of the strongest sources of positive emotion, namely happiness (Argyle, 2001). This research takes this into account by investigating how marital status transitions influence happiness across the life-course using ten waves of Australian panel data. Using a random effects model with each time-varying independent variable divided into cluster means and deviations from cluster means to enable investigation of between- and within-person variation, we find a strong association between relationship status transitions and happiness. However, when important individual characteristics are taken into account many associations cease to be significant. This suggests that happiness is better explained by individual characteristics that drive the choice of relationship status, such as relationship satisfaction, previous marital history or a cohabiter's intention to marry, rather than by relationship status alone. This research highlights that the association between relationship status and happiness may be better explained by a selection of happy couples into more committed relationships.

Argyle, M. (2001). *The Psychology of Happiness* (Second ed.). Sussex: Routledge.

**Symposium Child health and development in the US, UK and Australia**  
**Convenor: Mary Clare Lennon**

**Residential mobility and child well-being: evidence from the US and UK**

*Mary Clare Lennon, Anthony Buttaro. Jr., CUNY, USA*

The US and UK have relatively high rates of residential moves, with children in the US (especially very young children) showing especially high rates of residential mobility. A large body of (mostly US) research suggests that moving home sometimes results from, or in, beneficial changes in family circumstances, and is sometimes precipitated by adverse events such as family break-up or job loss. Any impact on children may be due to mobility per se, or to the circumstances that trigger home moves. Given the greater housing stability afforded to children in the UK through social policies, we expect that the types of events associated with moving house in the US (such as marital break-up) may be less strongly associated with residential moves in the UK. Effects of residential moves on child well-being are expected to be similar in both countries, especially when children move frequently.

**Socioeconomic disparities in infant health: a comparison of Australia, The United Kingdom, and the United States**

*Melissa Martinson, Princeton University, USA*

Socioeconomic (SES) inequality in health is a pervasive international issue. In the United States, there is evidence of a clear socioeconomic gradient in infant low birthweight, though the gradient varies by race/ethnicity. Low birthweight is an important marker for future child health and wellbeing. The literature on children's gradients in health in other countries is mixed, and no study has conducted cross-national comparisons of SES gradients in birth outcomes. This paper uses data from three highly comparable, nationally representative child cohort studies to compare SES gradients in birth outcomes in Australia, the United Kingdom, and the United States. The datasets are as follows: The Longitudinal Study of Australian Children – Birth Cohort (LSAC), the Millennium Cohort Study for the United Kingdom (MCS), and the Early Childhood Longitudinal Study – Birth Cohort and Fragile Families studies for the United States (ECLS-B). The outcomes of interest include birthweight, low birthweight, and small for gestational age. If neo-materialist explanations are driving SES gradients in child health, the SES gradient should be larger in the United States than in Australia or the United Kingdom. However, if relative social position or social comparison is driving health inequality, then similar gradients in all three countries are expected.

**Tiger mothers: Asian parents and their children's academic trajectories in the United States, United Kingdom, and Australia**

*Amy Hsin, CUNY, USA, Kate Choi, Sara McLanahan, Princeton University, USA*

Asian Americans are frequently referred to as the 'model minority' because of their high educational attainment. Using longitudinal data from three countries - the United States, the United Kingdom, and Australia – we examine whether the Asian education advantage emerges in childhood, whether it extends beyond the United States, and whether it can be accounted for by differences in socioeconomic status and/or parenting behaviors. Our results show that the Asian educational advantage is not universal. Rather, it is an age- and context-specific phenomenon. We find that although Asian mothers have higher educational expectations for their children, they are less likely than white mothers to be involved in educational activities with their children, which is contrary to popular accounts. Overall, our findings detract from sensationalized accounts about Asian parenting and the superior academic performance of Asian children.



### **Three generation family households in early childhood: cross-national comparisons between Australia, The United Kingdom, and the United States**

*Melissa Martinson, Princeton University, USA, Natasha Pilkauskas, Columbia University, USA*

Several US studies have documented positive and negative linkages between three generation (or extended/multigenerational) family households and outcomes for children. In the last decade, the percent of children who live in a three generation family household has risen from 6 to 8 percent of all US children, and these households are particularly prevalent among minority, low-income and immigrant populations. One recent study found that 80% of children born to lone mothers lived in a three generation family household at some point over the first nine years of their life. Although some research has been done on the US, very little has looked at the UK or Australia, and no studies investigate cross-national differences. Documenting differences in cross-national prevalence is an important first step in understanding differences in child wellbeing and the influence of family structure cross-nationally. Using data from the Early Childhood Longitudinal Study – Birth Cohort and the Fragile Families and Child Wellbeing Study for the US, the Millennium Cohort Study for the UK, and the Longitudinal Study of Australian Children – Birth Cohort we document the rates of three generation co-residence over the first five years of a child's life and investigate differences by race/ethnicity and immigrant status.

### **Associations of maternal iron intake in pregnancy with offspring birthweight and vascular function during childhood: findings from the Avon Longitudinal Study of Parents and Children (ALSPAC)**

*Nisreen Alwan, Debbie Lawlor et al, University of Leeds, UK*

Iron deficiency (ID) is the leading micronutrient deficiency in the world, with an estimated prevalence of 25-40% in pregnant women in developed countries. Animal studies have shown that maternal ID during pregnancy increases cardiovascular risk in the offspring. We have examined the relationship of maternal iron intake during pregnancy (determined from a food frequency questionnaire and information on supplements) with offspring birthweight and vascular function indicators, including endothelial function assessed by brachial artery flow-mediated dilatation (FMD), and arterial stiffness assessed by carotid-radial pulse wave velocity (PWV) at 10 years of age in ALSPAC. Maternal iron intake at 32 weeks was positively associated with birthweight. Women with dietary iron intake <8mg/day (25%) were more likely to have low birthweight babies (<2500 g) (adjusted RR=1.38, 95% CI 1.00, 1.90, n=8077). There was no association between maternal iron intake at 32 weeks and offspring vascular function at 10 years. However, there was a positive association between taking iron supplements at 20 weeks gestation and PWV (adjusted change=0.11 m/s, 95% CI 0.02, 0.21, n=5480). This relationship was attenuated when including cord ferritin in the model (change=-0.05 m/s, 95% CI -0.25, 0.15, n=1249), suggesting that cord ferritin is an important mediator in this relationship.

### **Light drinking in pregnancy appears not to be associated with developmental difficulties at age 7: a population based study**

*Yvonne Kelly, Amanda Sacker, Maria Iacovou, Institute for Social and Economic Research, University of Essex, UK*

The link between heavy drinking in pregnancy and subsequent developmental problems is well established. However, the picture for light drinking in pregnancy is less clear, partly because light drinkers are more likely to be socially advantaged compared with non-drinkers. These confounding effects are difficult to account for using regression analysis. In this paper we apply propensity score matching to match children born to light drinkers and non-drinkers on a large range of characteristics to more effectively estimate the effect of light drinking in pregnancy on markers of child development. Data were from the UK Millennium Cohort Study on 7 year old children. Markers of development were scores on standard cognitive ability tests for word reading, maths and spatial abilities. Data on socioemotional difficulties were collected from parents and teachers using the

Strengths and Difficulties Questionnaire (SDQ). After matching, differences were: word reading (3.7, s.e. 3.2), maths (4.3, s.e. 3.0), spatial abilities (5.9 s.e. 3.2), parent SDQ (-2.3, s.e. 3.1), and teacher SDQ (-4.0, s.e. 4.1). The analysis will be extended to consider gender differences. Findings suggest that children born to light drinking mothers are not at increased risk of cognitive or socioemotional deficits at 7 years of age.

### **Breastfeeding and metabolic syndrome risk at 17 years: results from a pregnancy cohort study**

*Wendy Oddy, Telethon Institute for Child Health, University of Western Australia*

**Background:** A shorter duration of breastfeeding in early infancy may be associated with an increased risk of the metabolic syndrome (MetS) in later adolescence.

**Aim:** Our aim was to investigate associations between early infant feeding and prevalence of the MetS at 17 years as defined by cluster analysis in a prospective pregnancy cohort

**Methods:** Infant feeding history was assessed by parent/guardian questionnaire in 2420 children at one, two and three years of age participating in The Western Australian Pregnancy Cohort (Raine) Study. MetS was identified at 17 years using a population-derived "high-risk" metabolic cluster variable (n=1053). Adjustment was made in multivariate logistic regression for gender of the child and maternal factors: pre-pregnancy body mass index, education and age at birth of the child.

**Results:** MetS prevalence was 17.9% according to classification into the high-risk metabolic cluster that included 16% of males and 19% of females. Compared to the low risk cluster the high risk metabolic cluster boys and girls had higher waist circumference, triglycerides, insulin, systolic blood pressure and lower HDL-cholesterol (all p values<0.0001). Following adjustment, breastfeeding cessation prior to four months of age was associated with an increased prevalence of the MetS at 17 years as defined by being in the high-risk metabolic cluster (OR 1.58; 95% CI: 1.08-2.32; p=0.02).

**Conclusion:** This study supports the theory that a shorter duration of breastfeeding is associated with a higher prevalence of being in the high risk cluster for MetS in later adolescence.

### **Trends in energy and macronutrient distribution in meals eaten by children from the Avon Longitudinal Study of Parents and Children**

*Suzana Almoosawi, Victoria Cribb, University of Bristol, UK*

Cross-sectional studies have reported associations between frequency of eating, snacking, breakfast skipping, night-eating and obesity. However, few studies have described longitudinal trends in time-of-day of energy and macronutrient intake. We investigated trends in time-of-day of energy and macronutrient intake in the Avon Longitudinal Study of Parents and Children. Diet was assessed using 3d estimated diaries at ages 10 and 13 years. Diaries were divided into seven time slots: breakfast, mid-morning, lunch, mid-afternoon, dinner, late evening and extras. Differences in energy and macronutrient distribution through the day at ages 10 and 13 years were assessed using ANOVA after adjustment for maternal employment and BMI. Lunch and dinner were found to contribute the greatest proportion of energy and macronutrient intake in both girls and boys at both ages. However, there was a shift in time-of-day of energy and nutrient intake for both sexes, with greater proportions of intake between meals (mid-morning, late evening, extras) and lower intakes at main meals (breakfast, dinner) at age 13 years compared to 10 years. Factors contributing to changes in energy and nutrient distribution warrant investigation and the implications of such changes in time-of-day of energy and nutrient intake on long-term health remains to be examined.

**Round Table**                      **Does school matter?**  
**Convenor: Katariina Salmela-Aro**

**Does school and gender matter for the development of aggressive behavior in childhood:  
A large-scale, longitudinal study**

*Monika Staffelbach, Andrea Jaberg et al, University of Zurich, Switzerland*

The aim of this paper is to conduct an analysis to detect gender differences in the stimuli and regulators influencing aggression from early to middle childhood. On the one hand, we analyse the influences of problem situations and on the other hand the resources on the personality level which might have a hindering effect on aggressive behavior? The theoretical framework is based on Bandura's social cognitive theory, life-course theory and gender socialization theory (Bandura 1983; Mayer und Diewald 2007). Our structural equation model with group comparison is based on data of the first cohort of the Swiss Survey of Children and Youth (Buchmann und Fend 2004) between the ages of 6 to 9 years (N = 1118). Aggressive behaviour is assessed by three items measured from the teacher perspective. Results indicate lower aggression scores for girls. In addition, boys show a much higher stability coefficient than girls. This points to a small change in the boys' rank order of aggressive behavior. The lower stability coefficient for girls might be due to a preference of relational aggression with increasing age. Verbal threat causes only girls to act more aggressively. Interestingly, social exclusion does not lead to a higher aggression level, whereas a stressful school situation has opposite negative effect. However, a bad teacher-child relationship causes only boys to act aggressively. From the personality level, sympathy and conscientiousness operate as preventive measures only for girls. In summary, boys seem to be more dependent on environmental influences and less protected through personality factors.

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**School engagement and burnout profiles during young adulthood**

*Katariina Salmela-Aro, Heta Tuominen-Soini, University of Helsinki, Finland*

Based on the life-span model of motivation (Salmela-Aro, 2009) transitions can be seen as triggers which channel the engagement and disengagement processes. By utilizing a person-oriented approach, the aim of this study was to examine what kinds of schoolwork engagement (i.e., energy, dedication and absorption) and burnout (i.e., exhaustion, cynicism, inadequacy) profiles can be identified during young adulthood in high school (N = 979) and later on in young adulthood (ages ranging from 17 to 25). We also examined the extent to which these groups differ in their academic and socio-emotional functioning. By using latent profile analysis, four groups were identified: engaged (44%), engaged–exhausted (28%), cynical (14%) and burned-out (14%). Six years later, engaged students were more likely than predicted by chance to attend university and cynical were more like to drop-out. Supporting Roeser, Eccles, and Sameroff (1998), adolescents who show signs of psychological distress in high school years are the ones who begin to disengage from school and later on from society as well.

## **Beating the odds: Exploring the impact of social risk on young people's school-to-work transitions during recession in the UK**

*Ingrid Schoon, Kathryn Duckworth, Institute of Education, UK*

In this paper we explore the role of school experiences in reducing the risk associated with family disadvantage (such as low parental education and parental unemployment) and that can prevent long-term negative outcomes such as low educational attainment and longer spells of unemployment (NEET).

We compare experiences in two nationally representative age cohorts (comprising more than 15,000 individuals) born in 1970 (British Cohort Study) and in 1989/90 (Longitudinal Study of Young People in England) to gain a better understanding of generalizable patterns across contexts. In both cohorts there is a strong relationship between the number of social risks experienced, academic attainment and the likelihood of becoming NEET. However, the results also demonstrate that some young people beat the odds and not all those who experience risks become NEET. Factors that reduce the cumulative risk effect include prior mathematics attainment and school engagement. We conclude with a discussion of school engagement as a possible lever for policy intervention as it has shown to be malleable through socialisation experiences and may also carry spill-over benefits to achievement.

## **Explaining friendship based family practice in the Scandinavian context**

*Karen Dahl, SFI – The Danish National Centre for Social Research, Denmark*

Applying a latent class analysis on the Danish Longitudinal Survey of Children, DALSC (N=6000), I construct a family-practice typology for 15-year-olds, based on sociological and psychological theory. The analysis combines a mother perspective on family practice with a child perspective and draw temporal lines to family practice in the 7th and 11th year of childhood. After developing the typology, I investigate the resource-background of the individual families in each family group, using a multinomial polytomous logistic regression model.

Preliminary results show that, comparing with Non-Scandinavian studies, the latent class analysis gives me a four-group-solution with a relatively large 'low-authority friendship based family practice' group' and correspondingly a relatively small 'authoritative group'. The mothers' perspective on family practice corresponds with the child's perspective, and I find consistency in family practice over time for some but not all groups. Further, the results support my hypotheses, that the mothers educational background, the parents labor market participation, their region of living, the inner structure of the family (who, how many, what age), the mental health of mother and child, and the child's gender do explain a large part of the variation in family practice.

## **Parental imprisonment – effects on adolescent's behavior and well-being?**

*Rikke Olsen, Aarhus University, Denmark*

Over the last 20 years imprisonment rates in many European countries have increased steadily (Walmsley 1999; 2004; 2012; Tavares & Thomas 2009). Many prisoners have families and children, and as a consequence the number of children experiencing parental imprisonment is assumingly also increasing. Overall, most studies suggest that children of prisoners are at risk of a range of adverse outcomes throughout their lives (Murray and Farrington 2008; Foster and Hagan 2009; Wakefield and Uggen 2010; Wakefield and Wildeman 2011). Still, the disentanglement of the effect of parental imprisonment from parental criminality or initial social disadvantage is still a great challenge in the literature. Using the Danish Longitudinal Survey of Children (DALSC) (n=6,011) on children born in 1995 and Danish register data, this study examines the effects of parental imprisonment on children's behavior and well-being using The Strengths and Difficulties Questionnaire (SDQ; Goodman, 1997). With the aim of removing the effect of time-invariant characteristics from the predictor variables and assessing the net effect of parental imprisonment, the study apply fixed effects models using data from the three most recent waves from 2003, 2007 and 2011.

## **Chances for young adults from lower secondary schools with basic intellectual requirements in Switzerland and Germany: (Non)coping the second threshold**

*Nora Gaupp, Boris Geier, German Youth Institute, Germany, Sandra Hupka-Brunner, Université de Bâle, Switzerland*

For adolescents with educational disadvantages, successful graduation from an upper secondary vocational education is essential. Vocational education and training is the way to the labour market that is basically provided for those adolescents. Furthermore, there are huge barriers to labour market integration for lower educated adolescents if they have not completed a vocational education.

This article examines the differences between the transition pathways of young people from Germany and Switzerland. We take advantage of data from the German DJI-Transition Panel and the Swiss Transition from Education to Employment Project (TREE), analyzing six years after compulsory schooling, focusing on adolescents from schools with basic intellectual requirements. We employ optimal-matching and regression models. In both countries, only some of the adolescents reach the second threshold. Whereas transition patterns in Switzerland seem to be rather structured, transition patterns in Germany are more heterogeneous; therefore, opportunities and risks are likely to be inherent at the same time. By analyzing gender, migration background, parental social status educational attainment and regional labor market situation we are able to show influences of individual, social and structural factors on transition pathways of adolescents.

## **The relationship between changes in mental health and changes in employment status**

*Rob French, University of Bristol, UK*

We examine the relationship between mental health (General Health Questionnaire) and socio-economic circumstances (employment status). The extant literature suggest there is no social gradient in mental health, by using new approaches to the problem we are able to show significant differences between groups. The first innovation is to investigate #changes# in mental health and socio-economic circumstances rather than current status, this identifies a more policy relevant and potentially larger impact. Secondly, to tackle reverse causality we model both mental health and employment status jointly (with correlated individual level random effects) rather than estimate the relationship in just one direction. Thirdly we use a separate model for the first wave of data for each individual, this overcomes the ‘initial conditions problem’ where the process under investigation begins before individuals entered the survey resulting in correlation between the first lag and the individual level random effect. We estimate this dynamic autoregressive cross-lagged model using all 18 waves of the annual British Household Panel Survey, showing how employment transitions impact on mental health and vice-versa, finally describing how these relationships change over the life-course.

## **Mental health problems across three generations of Australian families**

*Francis Mitrou, Kirsten Hancock et al, Telethon Institute for Child Health Research, Australia*

Research has consistently shown that children of parents with mental illness are at greater risk of developing mental illness, however few studies have examined the impact of familial mental health problems beyond the parent-child relationship. Using mental health data collected from 4600 families in Growing Up in Australia: The Longitudinal Study of Australian Children, this study examined mental health relationships across three generations of families. Children scoring  $\geq 14$  on the Strengths and Difficulties Questionnaire were classified as experiencing social-emotional wellbeing (SEWB) problems.

Compared to children with no family history of mental health problems, children who had a grandparent, but not a parent, with a history of mental health problems were 1.32 times (95% CI

1.07-1.64) more likely to have SEWB problems. They were 3.20 (95% CI 2.26-4.52) times as likely to have SEWB problems if they had a parent, but no grandparent, with a mental health problem and 2.58 (95% CI 1.91-3.49) times as likely to have SEWB problems if they had both a parent and a grandparent with a mental health problem. The results indicate that the mental health histories of both parents and grandparents are an important influence on the social-emotional wellbeing of young children.

### **Measuring happiness from young adulthood into middle age: A longitudinal perspective on gender differences in well-being measures**

*Janine Jongbloed, Lesley Andres, University of British Columbia, Canada*

The purpose of the current study is to investigate the relationship between gender and happiness over the life course. The central questions of this paper are as follows: (1) How do middle-aged British Columbians define “happiness” and “well-being”? (2) How do their levels of happiness and well-being differ by gender in midlife? (3) How do their levels of happiness and well-being change over the life course? Our research is based on data from the Paths on Life’s Way Project at the University of British Columbia, a 22-year longitudinal sample of the high school graduating class of 1988 in British Columbia, Canada. The research questions are explored using a sequential exploratory mixed methods approach; specifically, we use qualitative interview data to create definitions of “happiness” and “well-being” from the participants’ own words, quantitative survey data to examine differences in these variables by gender and changes in these variables over time, and then return to the qualitative data to interpret the results substantively. We interpret the data within the framework of Sen’s and Nussbaum’s capabilities frameworks, using their conceptualizations of functionings and capabilities in relation to people’s well-being and agency. We find that there is greater similarity than difference in participants’ definitions of “happiness” and “well-being” by gender, as well as overall similar changes in these variables over the life-course, including a decrease in well-being measures for both men and women over time; however, small gender differences are suggested by the data, including a pattern of greater relative increases in men’s happiness than women’s, as found in previous research, and a greater influence of higher education on men’s happiness as compared to women.

### **Forty years on: QLR re-studies and ‘within individual variability’ over the life course**

*John Goodwin, Henrietta O’Connor, Centre for Labour Market Studies, University of Leicester, UK*

Restudies of the same respondents at different points in time remain quite unusual within the social sciences beyond established longitudinal studies. Yet in 2000 we re-discovered data that had been abandoned for over forty years. The data, from Elias’s *Adjustment of Young Workers to Work Situations and Adult Roles* project (1962-1964), comprised 850 richly detailed interviews covering all aspects of the sample’s early lives. From the outset it was clear this represented an extraordinary opportunity to both revisit the transitional experiences of these young workers and to retrace some of the original respondents to explore their subsequent lives and careers – or as Laub and Sampson (2003: 302) suggest, this data afforded us a fantastic opportunity to ‘examine within-individual variability over nearly the entire life course’. Based on our analysis of the rediscovered data, and data from re-interviews with nearly 100 of the original respondents undertaken over forty years after the original interviews, here we aim to i) Outline the methodological issues involved in transforming a once cross-sectional study into qualitative longitudinal research (QLR); ii) We consider the emergent patterns of within individual variability relating to employment, education and occupational identities.

**Symposium Trajectories in language and literacy from infancy to late childhood in the Longitudinal Study of Australian Children (LSAC)**  
**Convenor: Catherine Taylor**

**Robustness and risk in early language acquisition**

*Catherine Taylor, Centre for Child Health Research, University of Western Australia*

The onset of language in the first two years of life is much anticipated by parents. Not surprisingly, parents are often worried when a two-year-old child is late to start talking and they want to know why. A related concern is whether or not this late start is prognostic of persistent language difficulties. In this paper, patterns and predictors of the onset and growth of language abilities from infancy (age 2) to early childhood (age 6) will be discussed, using the MacArthur-Bates Communicative Development Inventory as a measure of grammatical and vocabulary development and subsequent measures of receptive vocabulary. The extent to which late language emergence foretells persistent low levels of language will be considered. The implications for early language promotion policies and programs will be discussed.

**Language development and change: typical growth, patterns, and processes of vocabulary development in the Longitudinal Study of Australian children**

*Stephen Zubrick, Centre for Child Health Research, University of Western Australia*

The Longitudinal Study of Australian Children affords a rare opportunity to examine changes in vocabulary over time, directly measured on over 3000 children, in a well-characterized large national sample. What is the onward and typical pattern of growth and change in vocabulary development as children age from 4 years to 8 years? What are the typical and atypical patterns of change and what of the child's wider developmental ecology predicts this? We will use multilevel growth curve modelling to estimate the effect of a range of influences in the child's social and environmental ecology on vocabulary development. These influences include parental reading to the study child, whether the mother speaks a language other than English, family income and the number of siblings the study child has. Findings will highlight opportunities and challenges in conceptualising this growth and its development and in relating this to outcomes over time.

**Positional stability and change in vocabulary and literacy between ages 4 and 11**

*Daniel Christensen, Centre for Child Health Research, University of Western Australia*

Following a group of children across four waves of the Longitudinal Study of Australian Children we have assessed their receptive vocabulary at ages 4-5, 6-7 and 8-9, using the Peabody Picture Vocabulary Test and their onward literacy at ages 10-11 using the teacher-rated Academic Rating Scale. This allows us to assess positional stability and change, that is the extent to which children with lesser receptive vocabulary at Wave 1 remain in the lower performing group across time. We also discuss the risks associated with persistently low vocabulary and literacy, and predictors of group membership, including child factors such as child sex and birthweight and family factors such as family income and parental education.

**Symposium Socio-emotional development in African American children: The CANDLE Study**  
**Convenor: Carolyn Graff**

**Maternal and child factors associated with mother-reported child SE problems in African American children at 12, 24 and 36 months**

*Carolyn Graff, University of Tennessee Health Science Center, USA*

Maternal reports of their own behavioral health and temperament were assessed during gestation, at 4 weeks and at 12, 24 and 36 months after birth. Parent report of child SE development was measured on the Brief Infant Toddler Social Emotional Assessment (BITSEA) at 12 and 24 months and on the Child Behavior Checklist at 36 months. Child cognitive skills were measured on the Bayley Scales of Infant and Toddler Development-III. Chi-square, t- and median tests, and regressions compared children with and without reported SE problems at 12, 24 and 36 months. Maternal behavioral symptoms during gestation and thereafter, including depression, cyclothymic temperament, and parenting stress, are persistently associated with child SE problems during the first 3 years of life in this African-American, low income population. Increased maternal potential for child abuse is also associated with reported child SE problems. Recognizing maternal behavioral health problems during and after gestation may offer opportunities to prevent child SE problems and reduce potential for child maltreatment.

**Observed parent child interactions and SE outcomes in African American children at 12, 24 and 36 months**

*Frederick Palmer, University of Tennessee Health Science Center, USA*

In the same cohort, components of mother-child interaction were observed and measured using the Parent-Child Interaction Teaching Scale at 12, 24 and 36 months. Standardized maternal measures include: sensitivity to child cues; response to child distress; SE growth fostering; cognitive growth fostering; total caregiver score. Child measures include: clarity of cues; responsiveness to caregiver cues; total child score. T-tests and logistic regression compared observed mother-child interactions of children with and without reported SE problems. At 12 and 24 months, mothers who reported their child had SE problems showed less response to child distress. At 24 months, mothers who reported SE problems also showed less sensitivity to cues and fewer SE and cognitive growth fostering behaviors. Regression analysis showed maternal depressive symptoms at 4 weeks postpartum and previously mentioned PCI subscale scores at 12 and 24 months predicted SE problems. At 36 months, cognitive growth fostering behaviors were negatively associated with SE problems. When maternal depression at 4 weeks entered the analysis, cognitive growth fostering no longer predicted SE problems. Maternal-child interactions may mediate the association of maternal behavioral health and child SE problems.

**Linked lives in the 'Great Recession': parental economic hardship and children's achievement orientations and behavior**

*Jeylan Mortimer, Lei Zhang et al, University of Minnesota, USA*

Using two-generation data from the longitudinal Youth Development Study, this research examines the consequences of parental economic hardship in the aftermath of the current Great Recession on children's achievement orientations and behavior (economic efficacy, aspirations, and grades). Survey data were obtained from 277 children (mean age=15) of YDS panel members (age 35-36 in 2009), who have been followed since the age of 14-15 in 1988. Net of parental education, child age and gender, parental financial strain in 2009 had a negative effect on children's aspirations for educational and occupational attainment; parental lack of wealth (defined by the amount of savings, investments, and retirement portfolio) diminished children's grades in school. Children whose parents had only high school education (or less) were more vulnerable to fluctuations in family



economic indicators; while those whose parents had four-year college degrees appeared to be protected from the deleterious effects of financial strain and the absence of wealth during hard times. The parents' lack of wealth affected younger children's grades in school more strongly than the achievement of older children. The extent of parental unemployment during the prior decade (1997-2007) had no main effects, nor did it significantly interact with parental hardship in influencing children's achievement-related outcomes.

### **Loss or lost? Using parental job loss to compare social support structures in Germany and the US**

*Martin Diewald, University of Bielefeld, Germany, Michael Weinhardt, DIW, Germany, Patrick Wightman, University of Michigan, USA*

In this paper we address two important questions regarding the relationship between children's education and parental job loss and unemployment. First, we examine the mechanisms underlying the negative impacts of these experiences, including the economic and psychological consequences of job loss as well as heterogeneity with regard to parental abilities. Second, we use the relationship between parental job loss and early adulthood educational transitions to compare government-sponsored social support structures in Germany and the United States and their efficacy in preventing negative outcomes. We focus specifically on those programs designed to support consumption in times of adversity, such as unemployment insurance, as well as those intended to promote long-term employment stability, such work training. Our study examines and compares how well each country's programs are able to offset the many consequences of job loss and their effects on extended family members. We focus on young adults' educational attainment (at ages 17 and 21) because in both countries—in spite of their differences—secondary and post-secondary education are widely accessible and highly important for life success. Our data comes from two long-term, longitudinal studies, the Panel Study of Income Dynamics (PSID) for the US, and the Socio-Economic Panel Study (SOEP) for Germany.

### **Hedging risk, and/or embracing change? Trajectories of self-reported job insecurity, school and home transitions, and valuation of stable employment during early adulthood**

*Jack Lam, University of Minnesota, USA*

Using a longitudinal dataset from 777 youths surveyed by the ongoing Youth Development Study (YDS), I investigate trajectories of job insecurity over early adulthood, covering seven time points over approximately ten years, age 26 to 35, between 2000 and 2009. I find six distinct trajectories, of individuals following different patterns of job insecurity over time. Additionally, I investigate relationships between patterns of job insecurity with different types of behavioral patterns (i.e., attending school, living with parents, living with roommate), and job value pattern (i.e. valuation of stable employment) covering the same period. I find respondents with consistently high job insecurity, and those who reported highest rate of increase were not more likely to have returned to school. Rather, respondents who reported lower job insecurity were more likely to have been in school. The highest job insecurity group was more likely to have reported living with their parents and roommates throughout this period; while those who experienced the highest rate of increase in job insecurity were not. For work value, respondents who followed the lowest job insecurity trajectory were those who also have consistently attached the highest importance to stable employment.

### **Imagining life at 60: expectations about the third age among the 1958 British cohort**

*Jane Elliott, Centre for Longitudinal Studies, UK*

The concept of the third age (Laslett 1989) is now well-established. It is widely understood as a time of life when individuals are relatively free from responsibilities and have new opportunities for self-actualization and enhanced well-being. This paper will use qualitative data from the 1958 British Birth cohort that allows investigation of individuals' expectations about their life at age 60. Specifically, this paper will adopt a mixed methods approach to the analysis of responses to an open ended question that asked members of the 1958 British Birth Cohort (when they were surveyed at age 50), to 'Imagine you are 60...'. Over 7,000 cohort members gave a written response to this question. The paper will provide a detailed description of the ways in which cohort members wrote about their future lives, what key themes emerged and which vocabulary and phrases they used most often. It will also provide an analysis of the patterning of responses in terms of cohort members' gender, social class, and current wellbeing. The advantage of this data is that the large and representative sample allows for examination of the heterogeneity of individuals' expectations about the 'third age'.

### **Family life course patterns and retirement decisions – a sequence analysis approach**

*Gunnar Malmberg, Emma Lundholm, et al, Umeå University, Sweden*

The paper presents an analysis of family life courses and scrutinizes the impact of presence and nearness to relatives on retirement decisions, using sequence analysis and regressions.

Based on a unique longitudinal micro-data including information about siblings, parents and adult children in the Swedish population, we analyze how family composition (two-, three and four-generational families), as well as geographical proximity between family members change over the life course and further we scrutinize the influence of the family life course pattern (sequences) on retirement decisions for the young-old. We have access to a unique micro-data infrastructure, the Linnaeus Database, combining individual information from various administrative and health registers covering the total Swedish population. In order to study the spatial and temporal dynamics of family networks we focus on individuals' closest family network (parents, children and grand children). We follow individuals born 1935 over 17 years of their lives (1990-2006) and use sequence analysis to identify patterns of similar life courses. The impact of life course sequences on the retirement decision is estimated by use of regressions.

### **The prospects of the baby boomers: methodological challenges in projecting the lives of an aging cohort**

*Anika Rasner, Christian Westermeier, Markus Grabka, DIW Berlin, Germany*

The work and family patterns of the baby boomers in many countries set them apart from older cohorts, with more heterogeneous working careers and family lives which are less stable over time. Thus it is of crucial importance to understand how the employment and family lives of the baby boomers are linked to their prospective material well-being as they retire.

This paper presents a new approach for the projection of the life courses of the German baby boomers. Unlike model-based micro simulation that age the data year by year, we use a matching-based projection that projects sequences from older birth cohorts to complete the life courses of statistical twins. An advantage of this approach is the coherent projection of work-life, family, and earnings trajectories. In a showcase looking at the returns to education in terms of pension entitlements we show that within cohorts, differences between low and high educated individuals increase over time for men and women in East and West Germany. The most significant changes can

be observed for East German women, where women with low educational attainment accumulate very low pension entitlements that put them at a high risk of old-age poverty in the future.

**Symposium**                      **Project to enhance ALSPAC through Record Linkage (PEARL): linkage to health and administrative databases as a means to life-course participant follow-up**

**Convenor: John MacLeod**

**Symposium abstract:**

Linkage to health and administrative records provides a means to maximise the scientific return on the investment in child cohort studies, allowing low-cost and low participant burden follow-up throughout the life course. Using evidence from linkage in the Avon Longitudinal Survey of Parents and Children (ALSPAC) cohort the symposium papers describe the regulatory and technical barriers to linkage, generalisable solutions to address these barriers and exemplar research describing how objective linkage data can be used to cross-validate ALSPAC self-reported data.

**The Project to Enhance ALSPAC through Record Linkage (PEARL): rationale, scope and challenges**

Andy Boyd, Rosie Cornish, Amy Davies, John Macleod, ALSPAC, University of Bristol, UK

All prospective studies face problems related to the cost and completeness of participant follow-up, particularly when that follow-up extends across a life-time. ALSPAC, a large birth cohort started 20 years ago in the South West of England, is no different in this regard. In common with other European studies, ALSPAC is currently investigating ways to increase its use of linkage to routine health and social data to address problems both of cost-efficient follow-up and of incomplete participation and the biases and inefficiencies that can result from this. This work is brought together within PEARL, a five year research programme funded by the Wellcome Trust. This presentation will give a brief overview of the rationale and scope of PEARL in terms of the potential to enhance epidemiological research through the use of routine data. It will also consider some of the epidemiological, technical and regulatory challenges associated with realising this potential.

**Identifying strategies to improve consent response using a randomised controlled trial.**

Andy Boyd, Kate Tilling, Amy Davies, Rosie Cornish, Kerry Humphries, John Macleod, ALSPAC, University of Bristol, UK

Inviting individuals to consent to cohort studies is known to be subject to response bias. Study information materials are key to seeking informed consent yet they can represent a barrier to participation. While the content and implementation of consent materials are constrained by ethical frameworks, studies can conduct participant consultation, use marketing theory and engage professional expertise to improve the design of their materials. There is little literature evaluating different consent approaches using rigorous assessments and it has been speculated that researchers avoid using randomised control trial (RCT) methodologies to test differing approaches due to concerns regarding the potential negative impact of using control arms. <sup>1</sup>

This paper reports the results of the PEARL consent pilot, a RCT testing the impact on response of differing consent material content, design and reminder follow-up processes. The trial tested if these interventions; increase the absolute response rate, increase response from those participants with demographic characteristics predictive of non-response and if the intervention design is associated with the nature of the response (i.e. if a person is more likely to say yes or no). We consider if the trial impacted on the consent outcome and discuss the potential for testing follow-up strategies with RCTs.

#### References

<sup>1</sup>Booker CL, Harding S, Benzeval M. A systematic review of the effect of retention methods in population-based cohort studies.

### **Patterns in consent to study enrolment and linkage to health and administrative records; evidence from the PEARL consent campaign.**

Amy Davies, Andy Boyd, Rosie Cornish, John Macleod, ALSPAC, University of Bristol, UK

During childhood the ALSPAC index children participated using the consent of their parent/guardian. Upon reaching the age of maturity (age 18) ALSPAC have sought their renewed consent to participate in ALSPAC. This consent was sought as part of the PEARL campaign. PEARL also sought consent for follow-up through collecting data from health and administrative records; including records of the participant's health, education, benefit and incomes and any criminal convictions and cautions they may have. In this paper we describe the patterns in consent outcomes and evidence as to whether the process had a differential response by participant socio-economic position and/or study participation history.

ALSPAC has sought exemption from consent requirements to link to the health records of non-responders from the National Information Governance Board, the body advising the Secretary of State for Health on these issues. Provisional exemption was granted in 2012 for individuals explicitly advised of the implications of their non-response in this regard. This advice wasn't included in the consent information sent during 2011. We will assess any influence on response and refusal rates of this modification on those sent the revised consent information during 2012.

### **A generalisable solution for collecting participant data from primary care health records.**

Andy Boyd, Rod Middleton, David Ford, Rosie Cornish, Simon Thompson, Amy Davies, Jon Onslow, Adel Taweel, Ronan Lyons, Brendan Delaney, John Macleod, ALSPAC, University of Bristol, UK

Within the UK approximately 90% of contacts between the population and the NHS occur in primary care and are recorded within electronic patient records held by general practitioners. These records have the potential to provide a cost-effective means of retrospective and prospective follow-up for longitudinal studies. While national databases of primary care records have been proposed in England these projects are still in their infancy. PEARL is developing generalisable solutions to accessing primary care records in collaboration with key industry and National Health Service (NHS) partners. This paper describes this development. Using examples from our work as part of PEARL we will discuss technical challenges along with problems of data quality and completeness and also issues related to data governance and security.

## **A cross-validation of self-reported and GP-recorded asthma**

Rosie Cornish, John Henderson, Andy Boyd, Tjeerd Van Staa, Raquel Granell, John Macleod, ALSPAC, University of Bristol, UK

Misclassification is often a problem in studies using self-reported data<sup>1</sup>. In terms of asthma, for example, the presence of symptoms such as wheezing and breathlessness are central to its diagnosis in children<sup>2</sup> but in self-reported data wheezing due to viral respiratory infections cannot always be distinguished from wheezing due to other causes. In addition, there is not a definitive set of criteria used to diagnose asthma; doctors assign patients with a low, intermediate or high probability of having the disease<sup>2</sup>. This could easily lead to over-reporting.

As part of a larger study to explore the potential of data held in electronic primary care records to address issues of attrition and misclassification in prospective observational studies, subjects taking part in the Avon Longitudinal Study of Parents and Children (ALSPAC) also appearing in the General Practice Research Database (GPRD) were identified and their records linked in order to assess the extent of agreement between GP diagnosis and self-reports of asthma. Results from this analysis will be presented.

### References

1. Webb P and Bain C. All that glitters is not gold: the problem of error (2011). Chapter 7 in *Essential Epidemiology: An Introduction for Students and Health Professionals*, Second Edition. Cambridge: Cambridge University Press.
2. British Guideline on the Management of Asthma (2008). *Thorax*; 63 (Suppl 4) : iv1–121.

## **Inequalities begin before birth – evidence from Growing Up in New Zealand**

*Susan Morton, Polly Atatoa-Carr, Growing Up in New Zealand*

Growing Up in New Zealand is a contemporary longitudinal study that is following approximately 7000 participants from before birth. In 2009-2010, pregnant women and their partners were recruited into this study and face-to-face interviews were conducted in the antenatal period, followed by further interviews at 9 months and 2 years of age.

Data from linkage to perinatal hospital and health records and telephone interviews are also available. This study provides contemporary evidence of the early life experience for families growing up in New Zealand today. Significant inequity in health, developmental and social outcomes are evident in New Zealand with poorer outcomes seen for those living in socioeconomic deprivation and even steeper gradients of inequity seen for Maori (the indigenous population) children, and those from Pacific Island communities. This is the first longitudinal study that is powered to provide evidence of early trajectories to success and equity for Maori, Pacific, Asian and New Zealand European children from diverse socioeconomic context. This presentation will describe how some of the important differences in outcomes for children are set up in the first 500 days, from conception to 9 months of age, focusing intervention strategies to improve equity and outcomes for all New Zealand children.

## **The social reproduction of cognitive inequality in the early years**

*Roxanne Connelly, University of Stirling, UK*

A vast literature has highlighted the importance of childhood cognitive ability test performance, as well as parental socio-economic status on the educational and occupational outcomes of individuals. This paper focuses on the association between social background and the developmental trajectories of cognitive abilities in early childhood. Three British birth cohort studies are analysed: the National Child Development Study, the British Cohort Study, and the Millennium Cohort Study. The aim of this research is to investigate whether the association between early cognitive ability test performance and socio-economic origins differs between these three cohorts.

The predictors of cognitive ability performance of each individual cohort have been previously analysed. Early cognitive performance is highly stratified by socioeconomic origins, thus interpretation of change between cohorts is guided by the objective to improve understanding of how social, economic and policy changes have influenced the degree of early cognitive inequality. The present analyses will make particular consideration of the complexities of modelling performance on different ability tests over time within the individual, with more error at younger ages, as well as the equivalence of cognitive ability measures across the cohorts. Principal components analysis and panel analysis techniques are employed. Initial results highlight the pervasive association between socio-economic origins and cognitive ability test performance.

## **Breastfeeding and social mobility: what are the mechanisms?**

*Amanda Sacker, Yvonne Kelly et al, Institute for Social and Economic Research, Essex University, UK*

Breastfeeding has been associated with higher cognitive scores, better test results and fewer socio-emotional problems in childhood. These outcomes in turn predict social mobility. This study examines the effect of breastfeeding on inter-generational social mobility. We use data from two British birth cohorts to examine biologically plausible pathways mediating breastfeeding's relationship with social mobility. Rates of breastfeeding were higher in the 1958 National Child Development Study than the 1970 British Birth Cohort (43% vs. 21% breastfed 1+ months). Breastfeeding was more socially patterned by 1970, with advantaged mothers being more likely to breastfeed. A propensity score approach matched breastfed and non-breastfed children on a number of characteristics before estimating the effect of breastfeeding on social mobility. Social class at 10/11 years was based on father's class. Both class of origin and own social class in adulthood (age 33/34) were measured by the Registrar General's social class (RGSC). We modelled the odds of upward and downward social mobility conditional on being breastfed for 1 month or more and social class of origin. Results show that breastfeeding increased the odds of upward mobility and reduced the odds of downward mobility in both cohorts. Breastfeeding's effects appear to operate through enhanced neurological development and more effective stress processes.

## **Does cumulative poverty mediate the association between longitudinal family structure and socio-emotional behaviour at age 7? Findings from the UK Millennium Cohort Study (MCS)**

*Anna Pearce, Hannah Lewis et al, University College London, UK*

Children from lone parent and reconstituted (re-partnered) families have poorer socio-emotional outcomes and higher rates of poverty than those in 'natural' couple families. Using data from the MCS, we explored the association between longitudinal family structure, cumulative poverty, and socio-emotional behaviour.

We estimated risk ratios (RRs) and 95% confidence intervals (CIs) for abnormal-borderline total strengths and difficulties (SDQ) scores at age 7, according to typologies of family structure at 9 months, 3, 5 and 7 years. After adjusting for potential confounders, the number of sweeps spent in poverty (<60% median income) was added to the model to assess mediation.

The risk of borderline-abnormal SDQ varied significantly by family structure (baseline: children continuously living with both 'natural'\* parents). Differences were reduced, but in most cases remained significant, after adjustment for poverty: RRs fell from 1.64 (95% CI 1.36-1.97) to 1.38 (1.12-1.71) for those always living with a lone parent, from 1.65 (1.24-2.21) to 1.46 (1.08-1.95) in those living in lone parent families which became reconstituted, and from 1.75 (1.35-2.26) to 1.63 (1.26-2.12) in children from families which changed from 'natural' couple to reconstituted families.

The elevated risk of poor socio-emotional behaviour in children living in lone parent and reconstituted families is only partly mediated by cumulative poverty; alternative mechanisms require investigation.

\*term used in MCS fieldwork

### **Conformity to others' expectations as a rational choice: reference group effects and the educational aspirations of German and US-American students**

*Kerstin Hoenig, NEPS, University of Bamberg, Germany*

Explanations of educational outcomes and aspirations generally follow one of two opposed paradigms, the first claiming that individuals are "pushed" into an educational career by their background, while the second holds that educational choices are the result of rational cost-benefit calculations. In light of this conflict, I examine the influence reference groups have on the aspirations of German and US-American students. The Wisconsin model explains differences in educational aspirations by referring to the importance of friends, parents, and teachers who exert normative pressure towards conformity with their own expectations. I argue that these reference group effects need not be the result of blind compliance. Instead, social approval can be seen as one of many benefits that students consider in their decision. Conformity to others' expectations should then be conditional on the subjective probability that the educational goal is actually attainable, because social approval is only granted in case of success. Thus, significant others' influence should interact positively with factors that improve the chance of success, namely a student's cognitive and economic resources.

I test this hypothesis with data from two established US-American data sets – the Wisconsin Longitudinal Study of 1957 and the National Education Longitudinal Study of 1988 – and the first wave of the German National Educational Panel Study (NEPS) ninth-grade cohort, which will be released this summer. Results from the American data support the hypothesis. NEPS pilot data show a similar trend. The proposed interaction can thus be found across different educational systems and time points.

### **Parental imprisonment – effects on adolescent's behaviour and well-being?**

*Rikke Olsen, The Danish National Centre for Social Research, Denmark*

Over the last 20 years imprisonment rates in many European countries have increased steadily (Walmsley 1999; 2004; 2012; Tavares & Thomas 2009). Many prisoners have families and children, and as a consequence the number of children experiencing parental imprisonment is assumingly also increasing. Overall, most studies suggest that children of prisoners are at risk of a range of adverse outcomes throughout their lives (Murray and Farrington 2008; Foster and Hagan 2009; Wakefield and Uggem 2010; Wakefield and Wildeman 2011). Still, the disentanglement of the effect of parental imprisonment from parental criminality or initial social disadvantage is still a great challenge in the literature. Using the Danish Longitudinal Survey of Children (DALSC) (n=6,011) on children born in 1995 and Danish register data, this study examines the effects of parental imprisonment on

children's behavior and well-being using The Strengths and Difficulties Questionnaire (SDQ; Goodman, 1997). With the aim of removing the effect of time-invariant characteristics from the predictor variables and assessing the net effect of parental imprisonment, the study applied fixed effects models using data from the three most recent waves from 2003, 2007 and 2011.

### **Associations between mid-childhood problems and early sexual behaviour: a longitudinal study using the ALSPAC cohort**

*Alison Parkes et al, Medical Research Council, UK*

**Objective:** To investigate which types of mid-childhood problems (behavioural, emotional and school-related) assessed at two time points in early or late primary school are associated with early sexual behaviour.

**Method:** Information on sexual behaviour in the past year ("early sex") was gathered from fifteen year-olds in a birth cohort study, the Avon Longitudinal Study of Parents and Children (N=4798). Hyperactivity/inattention, conduct problems, depression, peer relationship problems, school attitudes and attainment were measured at two time points in primary school. Multivariate regression of sexual behaviour on mid-childhood problems adjusted for child, family and parenting characteristics.

**Results:** Conduct problems in early primary school that persisted until late primary school, and child-reported school dislike in late primary school, were both associated with increased risk of early sex. Peer relationship problems predicted reduced risk. Teenagers who followed a higher-risk pathway to early sex at 15 years, via other risk behaviours in their early teens, were further characterised by early, persistent dislike of primary school.

**Conclusions:** Behavioural and emotional problems together with negative attitudes to school in primary school-age children predicted early sex. This might offer early opportunities for identification and targeted intervention.

### **Does pre-drinking increase alcohol consumption? A cross-national night-time economy panel survey of young people's drinking in United Kingdom and Denmark**

*Jeanette Østergaard, Peter Olsen, The Danish National Centre for Social Research, Denmark*

Based on a unique panel dataset using innovative mobile surveys collected in the United Kingdom (UK) and Denmark (DK), this paper examines whether young people who pre-drink (i.e. the practice of drinking at home before attending a bar or a nightclub) consume more alcohol during their night out. Pre-drinking has been associated with greater risk behaviour including an increased consumption of alcohol. However, to determine whether pre-drinkers actually do consume more alcohol on a night out, panel data is needed. This paper therefore uses a flexible panel data model, called a random coefficient model, on survey data first collected face-to-face in the night-time economy and then followed up using the latest mobile survey technology. The statistical model allows for each individual to differ in their overall consumption of alcohol as a function of their time spent pre-drinking. The model and unique dataset allows us to investigate whether there is a difference within and between individuals as a function of time, and whether pre-drinking causes a higher consumption of alcohol during a night out.

### **Life-course body mass index, birthweight and lipid levels in mid-adulthood: a nationwide birth cohort study**

*Snehal Pereira, Chris Power, Institute of Child Health, UK*

Improvement of lipid profiles is important to reduce cardio-vascular disease risk. Lipids track from childhood, implying that influences on adult cholesterol begin at young ages. In the 1958 British Birth Cohort (N=3,927 men; 3,897 women), we aimed to determine whether there are particular life-stages of growth (birthweight and body mass index (BMI)) that are important for 45y adult lipid levels.



Birthweight was inversely associated with triglycerides and in women with total-and LDL-cholesterol; associations persisted after adjustment for 7y BMI. Associations with lipids strengthened with age of BMI measurement, e.g. per standard deviation (SD) higher BMI at 11y and 45y triglycerides were higher by 4.01% (95% confidence interval: 2.26%, 5.75%) and 19.75% (18.18%, 21.32%) respectively in women. BMI change was related to lipids, with strongest associations for the interval preceding lipid measurement: per SD increase in BMI 33-45y total-cholesterol and triglycerides were higher by ~3% and ~21% respectively. Associations between 45y BMI and lipids were stronger for those with lower than higher BMI at younger ages. Longer duration of obesity was unrelated to lipid levels. Results highlight detrimental consequences of high adult BMI for lipids as being particularly notable for those with lower BMI at earlier life-stages.

### **A dietary pattern prospectively associated with cardio-metabolic risk factors in adolescence: results from a pregnancy cohort**

Geeta Appannah, Rae-Chi Huang et al, MRC, Human Nutrition Research, Cambridge, UK

Energy dense, high fat, low fibre diets may contribute to cardio-metabolic risk, however these relationships have been under-explored in young people. This study examined prospective associations between an 'energy-dense, high-fat and low-fibre' dietary pattern (DP) and cardio metabolic risk factors in adolescents. Data were provided by 1,444 participants from the Western Australian Pregnancy (Raine) Cohort Study. At 14 and 17 years of age, BMI, waist circumference (WC), fasting serum lipids and insulin resistance (HOMA) were measured. Overall metabolic risk was summarised using cluster analysis. The DP was identified using reduced rank regression. Prospective associations between DP z-scores and changes in cardio-metabolic risk factors were examined adjusting for age, BMI, physical activity and dietary misreporting. Between 14 and 17 years of age, a 1 SD unit increase in DP z-score was associated with a 39% greater odds of the high metabolic risk cluster and a 2% increase in HOMA among boys ( $p < 0.05$ ); in girls, WC z-score increased by 0.03 ( $p$  value=0.02). Girls in the highest DP quartile showed increases in LDL-C of 0.10 mmol/L ( $p < 0.05$ ). These associations were independent of BMI. An 'energy dense, high fat and low fibre' DP during adolescence may predispose to greater cardio metabolic risk, independent of obesity.

This work was funded by NHMRC (Australia) project grant (ID #403981), UK MRC program grant (U105960389) and a PhD studentship from the Ministry of Higher Education, Malaysia.

### **Childhood adversity and early mortality: plausible pathways towards health inequalities?**

*Michelle Kelly-Irving, Cyrille Delpierre, INSERM, France*

Developmental processes occurring throughout childhood, which vary in their biological and behavioural complexity, render children's physiological and cognitive functions more plastic and capable of adaptation. Adverse exposures occurring early in life may alter biological systems, setting an individual on a pathway towards ill health. Using the National child development study the relationship between adverse childhood experiences (ACE) and mortality before the age of 50 was examined for men ( $n=8073$ ) and women ( $n=7618$ ). A multivariate Cox's proportional hazard model was run controlling for early life variables and for characteristics at age 23. Among men, the risk of death before 50 was 75% higher for those who had experienced two or more ACEs compared to those who had no ACEs (HR: 1.75, 95%CI: 1.29-2.38,  $p < 0.001$ ). Among women a graded relationship was observed between ACE and mortality with the risk increasing as ACEs were cumulated. Women with one ACE had a 57% increased risk (HR: 1.57, 95CI: 1.14-2.16,  $p: 0.006$ ) and those with two or more ACEs had an 88% increased risk (HR: 1.88, 95%CI: 1.19-2.98,  $p: 0.007$ ) of mortality versus those with no ACEs. This suggest that ACEs could be a possible source of toxic stress, and examined as a potentially important initial exposure on a pathway towards adult ill health and early death.

## **Early and adult social determinants of adult respiratory symptoms in Great Britain: findings from the 1970 British Birth Cohort Study (BCS70)**

*Noriko Cable, Mel Bartley et al, University College London, UK*

Using the 1970 British Birth Cohort Study (N=6,099), we examined if early and adult determinants of respiratory health would mediate the association between father's social position, indicated by the Registrar's General Social Class (RGSC), and adult respiratory symptom patterns, consisted of cough and phlegm at age 30. Early determinants are individual (smoking and exercise) and home environment (dampness and household smoking) factors at age 10. Adult determinants are household smoking status, including the participants' themselves and exercise at age 30. We adjusted the effects of sex, birth weight, respiratory distress, and respiratory symptoms at age 10.

Findings of multinomial logistic regression showed that adults with disadvantaged social upbringing were likely to have respiratory symptoms at age 30 in reference to those with no symptoms. Household smoking status at age 30 showed a large effect on adult respiratory symptoms. Although the effect of dampness in the house at age 10 on adult respiratory symptoms was moderate, this attenuated the association between father's RGSC and the outcome.

In sum, addressing dampness at home of all children, especially those from socially disadvantaged background can be an early start to reduce social gradients in adult respiratory health, along with ongoing interventions of smoking cessation.

## **Poster Session 1**

### **Persistence of poverty in ethnic minority groups in the Millennium Cohort Study**

*Jane Ahn, Anna Pearce, University College London, UK*

It is well established that, in the UK, ethnic minority groups are more likely to live in poverty; however, the majority of evidence is based on cross-sectional data, and therefore cannot capture patterns of transient and persistent poverty. Using Millennium Cohort Study (MCS) data, we examine the association between ethnicity and cumulative poverty from birth to age 7 years. Cumulative poverty, captured at age 9 months, 3, 5 and 7 years, was determined by the number of sweeps (0-4) spent in households with <60% median income. Unadjusted analyses showed that non-white groups were more likely to have experienced poverty and be persistently poor (all 4 sweeps) than white children. For example, 42% Pakistani/Bangladeshi, 29% black, and 20% mixed background children were persistently poor, compared with 10% white children. Additionally, only 13% Pakistani/Bangladeshi children had never been poor compared with 59% white children. Indian children did not significantly differ from white children. These patterns of poverty remained after adjusting for family structure, maternal education, number of siblings, and grandparents in household. Ethnic minority children were at higher risk of persistent poverty, adjusting for family characteristics. Further work should consider pathways through which ethnicity and poverty might be associated.

### **Understanding instability: examining residential mobility AND household change**

*Kate Bachtell, Cathy Haggerty, Ned English, National Opinion Research Centre, USA*

Literature supports the desirability of studying individuals in the context of their immediate social unit, the household. Yet focused studies of household composition reveal that households in economically disadvantaged populations with low home ownership rates are particularly likely to experience additions, subtractions, and substitutions among members. This poster describes our method for, and the importance of, tracking residential mobility at the household level that could be integrated with the household-level data to identify changes beyond numerical shifts in household size. We use the combined data to examine residential mobility across a gradient scale of stability in household composition. First, we demonstrate a more comprehensive understanding of residential change by mapping change in household composition, or households repopulated entirely with new occupants, in combination with physical relocation during a ten-year period. A series of maps compare the geographic patterns of residential movement among households that experience specific types of changes versus those that remain stable. Second, we use regression modelling to examine the influence of household instability at a finer level on the propensity to move. Finally, we highlight the social and economic characteristics of households that would be cast as stable without the addition of the linked individual identifiers.

### **Association between birth weight and preterm birth among female of textile, garment and related trade workers**

*Gediminas Balcius, Regina Grazuleviciene, Jone Vencloviene, Vytauto Didziojo University, Lithuania*

Several studies have shown that environmental risk factors and parental occupation may play an important role in adverse pregnancy outcomes. The aim of this study was to assess whether occupational exposure to various chemicals and noise increase the risk of adverse pregnancy outcomes. Associations between maternal exposures and birth outcomes were studied in 4161 pregnant women participating in a prospective cohort study in Kaunas city. Adjusted odds ratios (ORs) and 95-percent confidence intervals (CI's) for preterm birth (PD), low birth weight (LBW) and small for gestational age (SGA) were estimated for textile, garment and related trades workers (according to ISCO-88, 743) using multivariate logistic regression model. Maternal occupational exposure to noise and chemical materials was associated with increased ORs for SGA (OR 2.63, 95%

CI 1.22-5.65 and OR 4.10, 95% CI 1.06-15.87), for LBW (OR 2.13, 95% CI 0.78-5.73 and OR 3.79, 95% CI 0.72-19.87), and PD for chemical materials (OR 1.13, 95% CI 0.14-9.34), after adjustment for: parity, marital status, smoking, alcohol consumption, chronic disease, parity, body mass index, blood pressure, infant gender, age group.

Our results suggest that certain occupational exposures common to textile, garment and related trades workers may be related to risks of adverse pregnancy outcomes.

### **Associations between social relationships and development of global self-esteem**

*Marianne Birkeland, Bente Wold et al, University of Bergen, Norway*

This longitudinal study examined how parent-adolescent relationships and peer relationships were associated with global self-esteem development in 1089 Norwegian adolescents from the ages of 13 to 23. A quadratic latent growth curve for global self-esteem with relationships to parents and peers as time-varying covariates was modelled, taking measurement invariance in global self-esteem into account. The results showed both interaction and main effects of parent-adolescent and peer relationships on global self-esteem during the ages 13-23 years, when the latent growth curve was controlled for. The findings suggest it is advantageous to study more than one type of social relationships at a time when examining associations with global self-esteem.

### **A 25 year follow-up study of oppositional 'punk' girls**

*Ase Broman, Oslo and Akershus University, Norway*

Background: The follow-up were active participants in the Oslo based punk milieu as adolescents. During the 1980s, after they had received housing supports from the municipality of Oslo, they were previously studied when they were about 20 years of age (Broman, 1992). The punk girls were unique in the way they presented themselves to others, wearing pink, purple and green cock's comb haircuts. Their behavior was often experienced as being aggressive and frightening, as they very rigorously protested against established society. These young women moved away from their family homes when they were still children (12-14 years of age). They were homeless and without an income when they began squatting in unoccupied buildings early in the 1980s. There is very little systematic knowledge about the variations of experiences of being a parent for people who have shown marginalized behavior as adolescents.

Methods: The study of the "punk"-girls consist of the 10 mothers who provided life history interviews in 1987/1988. The women where then about 16-20 years of age. The women are now between 40 and 45 years of age and their children are between 13 and 22 years of age.

Qualitative interview-data are collected with the same women in 2011/2012

The analytic focus

The study focuses on following questions:

1. How do the women experience their lives? This question focuses upon their situation in life with regard to work, education, economy, housing, social network, civil status, children, physical and mental health, drug abuse and criminal behavior. There is very little systematic knowledge about the variations of experiences of being a parent for people who have shown marginalized behavior as adolescents.
2. How have experiences from a punk environment been relevant in their understanding of parenthood and in their practice of parenting?
3. How is everyday life experienced by those who are parents, when they are together with their children?
4. What kinds of contact do these parents have with the micro-arenas of their children, which include grandparents, kindergartens and schools?

## Preliminary findings

### Findings in 1988:

Many of these girls were reported to child welfare services because of the way they looked and because they didn't fulfill the accepted expectation of what a mother should be. The study provided surprising findings, and showed that the young punk mothers had the ability to provide their children with good care.

### Findings in 2012:

They are in creative professions such as art, culture and media.

They're still independent women

Mothers now have from 2-4 children aged from 7 to 20 years

The most important thing in life is children.

In child rearing is to love their children important

The women have taken many of the same values, basic elements of punker life, in his adult life. Anti-materialism and solidarity is still important

They are concerned with solidarity and of taking care of the children and each other.

## **Combined analysis of the risk of adverse birth outcomes associated with maternal occupational exposure across European birth cohorts**

*Maribel Casas, Sylvaine Cordier et al, CREAL, Spain*

Occupational maternal exposures before conception or during pregnancy may be hazardous to fertility and optimal child development. Population-based birth cohort design has been used very few times in this field. A combined analysis with data from different European birth cohorts was conducted to estimate the risk of specific occupations on birth outcomes.

As part of the CHICOS project, a total of 14 European birth cohorts studying more than 200,000 mother-child pairs have been included. Nine occupational sectors were defined as potentially exposed: health, cleaning, agriculture, lab worker, hairdressers, etc. Birth weight and small-for-gestational-age were the outcomes assessed. Potential confounders were included in the analysis. We performed meta-analyses using a random effects model.

Between 75-92% of women declared having worked during pregnancy and those women appeared to have higher birth weight compared to non-working women. The nine occupational sectors accounted for 44% of total workforce. Cleaning work appeared to be negatively associated with birth weight. Specific associations with other occupational sectors at risk within the working women will be presented.

Pooling data across European birth cohorts will provide enough statistical power to disentangle the effects of specific occupational exposures on birth outcomes and will allow to study the heterogeneity between countries.

## **Relationships between body composition, cardiovascular-metabolic status, hormones and lifestyle during critical biological periods of women's lives: a longitudinal family study (The Calex-family study)**

*Sulin Cheng, University of Jyväskylä, Finland*

This study focus on the change of body composition and metabolic status through critical developmental periods in a woman's life (peripuberty, peripregnancy and perimenopause). The impact of these changes on health status in current and later life, neither of which has been thoroughly addressed previously. The study has a unique 8-year longitudinal study cohort (n=396

girls at the baseline 10-13 years old) and family database (225 mothers, 152 fathers, 188 grandmothers, 52 grandfathers, 79 sisters, and 41 brothers) on body composition, lifestyle, blood samples with multiple measures. Currently, the study continues with new 12-16-year follow-ups for girls and 5-10-year follow-ups for mothers and grandmothers to investigate the relationships among body composition (including total lean mass and bone mass, and total, central, visceral, and ectopic fat content), metabolic status (glucose metabolism and metabolites profile), hormonal milieu and lifestyle within and between the critical periods of a woman's life. Combine extensive pre-existing data with new state-of-art tools such as metabolomics and new analytical approaches such as constructive models will allow us to further investigate the factors associated with the change of body composition through women's critical life stages, the impacts on current and later health status, and the possible underlying mechanisms.

### **Development of a data quality index for daily reports about bipolar disorder**

*Stasja Draisma, Jan van Zaane, Johannes H. Smit, VU Medical Center, The Netherlands*

The Self Rating-Pro prospective Life Chart Method (LCM) is an instrument with which patients with bipolar depression record behaviour and functioning (illness severity) on a daily base. During approximately a year, 137 patients with DSM-IV diagnosed bipolar disorder self-rated their illness severity and number of alcohol units consumed (considered an important independent variable). We investigated whether data quality affects the concepts and relationships assessed with such daily reports.

The paper focuses on:

- 1) Choice and construction of data quality indicators. Three methodological concepts are defined and operationalised into several indicators: 1. compliance (percentage missing, observation length), 2. consistency (association between related concepts measured in the daily reports, association between clinician and patient reports), 3. reactive effects (behaviour change resulting from the measurement of the behaviour itself).
- 2) Data are grouped according to the values of the developed data quality indicators, and related to patient characteristics and illness related variables in the study. Results indicate that data quality is related to illness severity: high scores on illness severity are associated with lower data quality. Effects of data quality on concepts measured and on parameter estimation for longitudinal associations between alcohol use and illness severity are discussed.

### **Parental investment, child health formation and racial differences**

*Zheng Fang, Ohio State University, USA*

Recent researchers across social and medical sciences suggest early life circumstances have long term consequences for adult physical, cognitive and emotional health. This has given rise to the theory of developmental plasticity that children are most sensitive to inputs received during their early years. Evaluation of this hypothesis demands a study that accounts for the dynamic and cumulative nature of health formation process, which is lacking in the literature. I contribute to this investigation by empirically testing the hypothesis: I estimate a value-added child health production function with time varying rates of return to investment. Using the Children of U.S. National Longitudinal Survey of Youth 1979 (CNLSY79), I employed a multiple-indicator multiple-cause (MIMIC) model in which concurrent measurements act as instrumental variables. I find that investment rates of return during the prenatal and infancy periods are higher than those in subsequent periods of a child's life. I also explore racial differences in the production function and find that rates of return to investment are lower for black children than for whites. This finding contributes to an understanding of how racial disparity in health at birth persists through childhood.

### **Victimization trajectories and well-being of a young cohort who lived through the wars**

*Rachel Fasel, Dario Spini, University of Lausanne, Switzerland*

Using retrospective data from 2'254 young adults living in ex-Yugoslavia, this research aims at two goals: 1) analysing victimization trajectories taking into account socio-economic (unemployment, homelessness,...), and socio-political exclusion (discrimination, rights limited,...) episodes, as well as war-related events (wounded, death of a family member,...); 2) relating different victimization trajectories to different levels of well-being. Data comes from "Transition to Adulthood and Collective Experiences Survey" which was launched in 2006 in Bosnia-Herzegovina, Croatia, Former Yugoslavian Republic of Macedonia, Kosovo, Montenegro, Serbia, and Slovenia. The transition to adulthood of the cohort under study (35-38 years old) was shaken by wars, conflicts and economic precariousness. Victimization periods and events from 1990 to 2006 were recorded on a face-to-face life calendar. This time interval allows examining respondents' victimization status before the beginning of the conflicts, during the war periods, and after the wars. Beyond a general mean trajectory of increase of victimization during the war periods and a decrease after, results show different profiles of victimization throughout time, which are related to different levels of satisfaction with life. This study stresses the importance of actual status, but also the importance of timing and duration of victimization episodes when studying well-being.

### **Determinants of neonatal weight changes in full-term newborns - Geracao XXI birth cohort study**

*Maria Fonseca, Henrique Barros, Ana Cristina Santos, University of Porto, Portugal*

We aim to describe the determinants of excessive weight loss (WL) and weight gain and maintenance (WGM), in the immediate neonatal period (first 4 days of life), in full-term newborns.

This study was based on the birth cohort Generation XXI, which included 8647 newborns, recruited between April 2005 and August 2006 at the five public units providing obstetrical and neonatal care to the inhabitants of the metropolitan area of Porto. Data were mainly abstracted from clinical records, and additionally collected through an interview after delivery. Between April 2009 and April 2011, the cohort was reevaluated. In this follow-up, the *Livro de Saúde Infantil* (Child Health Book) was scanned and all anthropometric measurements obtained by a health professional and recorded, from birth to the current age, were abstracted. We evaluated 7458 children (86.2%) and of those, the Child Health Books were available for 5521 (74.0%). For the purpose of this study, we only considered 1977 term singletons, who had birth weight and at least one weight measurement recorded in the first 4 days of life. Neonatal weight change was calculated as the difference between the lowest weight recorded anytime during the first 4 days of life and birth weight and categorized in three classes: excessive WL ( $\geq 10\%$  loss of birth weight), normal WL ( $< 10\%$  loss of birth weight) and WGM. The associations between excessive WL and WGM and the explanatory variables were estimated using multinomial regression models and adjusted odds ratios (OR) and 95% confidence intervals (CI) were calculated. Excessive WL was associated with mother's age (OR=1.06 95%CI 1.003-1.115), maternal birth weight (OR=2.21 95%CI 1.088-4.470 macrosomic vs. normal weight) and parity (OR=2.08 95%CI 1.161-3.727 primipara vs. multipara). WGM was associated with child's birth weight (OR=6.77 95%CI 1.669-27.415 low birth weight vs. normal weight).

While excessive WL was associated with maternal characteristics, WGM probably reflects child's catch-up growth.

### **Young people, economic crisis and uncertainty: how young people deal with the consequences of the economic crisis and labour market challenges in Germany - analyses over time (1992-2009)**

*Martina Gille, Wolfgang Gaiser, Germany*

The social situation before and during the present financial and economic crisis implies special challenges precisely for adolescents. Young people react with an intensified readiness to perform. They also ask themselves, though, whether or not their orientation toward gaining competencies is

worthwhile and whether or not the social wealth is fairly shared. Such evaluations affect satisfaction and play a not insignificant role in the political discussions about economic and social development.

The aim of the analysis is to identify the relative contributions of economic, social and cultural capital to youth transitions, and their potentially changing roles in conditions of economic crisis. The research will extend the search for facilitators of and impediments to youth transition to include perceptions of self-efficacy, coping-strategies, and political views and social attitudes, including political participation, openness to change, life satisfaction. With the DJI survey AID:A, empirically sound data for the period of the 2009 economic and financial crisis are available. The comprehensive, representative longitudinal study, DJI Youth Survey, sheds light on trends, including developments since the beginning of the 1990s.

### **Transition to parenthood and working hours in Switzerland: men's and women's intentions and practices before and after the birth of the first child**

*Nadia Girardin, Jean-Marie Le Goff, University of Lausanne, Switzerland*

The literature shows that the transition to parenthood induces couple organizational changes leading to stronger inequalities between men and women. However, is this inequality manifestation expected by couples? In this communication are investigated links between couples' intentions about paid working hours before the birth of their first child and practices after this birth. We use Becoming a Parent survey data collected between 2005 and 2009. This survey is a three waves panel in which 232 couples living in the French-speaking area of Switzerland have been interviewed one time before and two times after the birth of their first child. First results show that the transition to parenthood impacts on mothers' working hours intentions and practices but not on fathers' working hours. We are interested to understand better which women and men actually decrease their working hours and which do not and if the actual change of working time fit with the intentions as expressed before the birth. We compare these results with intentions and practices declared at the same time concerning task and care division.

### **Social Participation, life course and marginality – A 30 year longitudinal study of youths with serious behavioral problems**

*Ingeborg Helgeland, Oslo and Akershus University, Norway*

The study is based on a 30-year longitudinal qualitative and quantitative study of a group of 85 informants all having had severe adjustment problems/juvenile delinquency during adolescence: 54 men and 31 women. Informants were interviewed at four stages: T1 (age about 14-15), T2 (age 20), T3 (age 30) and recently at T4 (age 40-45). T1 was the period when this group of ethnic Norwegian adolescents joined a state-initiated child welfare programme arranged to investigate alternatives to imprisonment for adolescents with antisocial behaviour. Instead of going to prison, the adolescents moved to different kinds of child welfare initiatives. A logistic regression analyses at T3 show that well-resourced foster homes and treatment communities for young drug abusers were found to give the youngsters a chance to coming into a positive track in adult life. This include a process of enabling the young people to learn step by step to have confidence in adults as significant others, to live 'ordinary' everyday lives and gradually to break with friends with antisocial conduct (Helgeland 2010). Other findings were that being a female gives a better chance to overcome behavioural problems than being a male. And to grow up with alcohol-abusing parents give less chances to resocialization. Moreover, early onset of behaviour problems at school before 12 makes socialization more difficult than if behavioural problems appear at a later stage. At last, to get a boy- or girlfriend not having behavioural problems protect against drug-use and criminality as adult. The goal of this fourth follow up study is to investigate the life course of the same persons, now being 40 -45 years old. The project has special emphasis upon their social participation as adults, included working life. *How do they through time navigate and negotiate their lives from excluded to included positions?*



This fourth follow up focuses primarily on life history interviews, and a combination of narrative analyses and content analyses.

The analysis include questions like:

- 1) How many are still alive? 2) How have they managed their lives when it comes to drug-use and criminality, work, education, help from the social security, family life? 3) How do the women experience their lives, and how do the men experience their lives that they are living as 40 -45 year olds? 4) How have these men and women experienced the transitions in the phases of their lives? 5) How do those who have children experienced being mothers or fathers?

### **Social origin, parenting practices and conscientiousness in early childhood**

*Till Kaiser, Bielefeld University, Germany*

The role of personality traits in the production of social inequality has increasingly been the subject of sociological inquiry. Conscientiousness, in particular, has proven to be an important predictor of educational achievement and occupational attainment. The importance of conscientiousness in predicting unequal outcomes in the life course leads to the question of whether differences in this trait have their origins in social stratification. Parenting practices have been shown to vary across socioeconomic strata and to influence children's outcomes in different ways. Yet there has been little research to date on the extent to which dimensions of parenting mediate or moderate the effects of social origin on child outcomes. The main objective of this paper is to identify whether mothers in Germany differ in their parenting practices by their social origin, and whether these affect the development of conscientiousness in early childhood.

A Structural Equation Model is estimated with data from the SOEP, in which children are observed at three measurement points: 0-23 months, 2-3 years, and 5-6 years (N=519).

The results suggest that in Germany, parenting practices mediate the positive effect of mother's education on a dimension of child's conscientiousness. So they can be identified as a specific reproduction-mechanism of inequality.

### **Cord leptin, maternal pre-pregnancy body mass index and birth outcomes: mother-child cohort (Rhea Study) in Crete, Greece**

*Polyxeni Karakosta, Vaggelis Georgiou et al, University of Crete, Greece*

**Objective:** Leptin has a major physiological role in the control of energy balance. Whether maternal obesogenic environment and cord leptin play a synergistic mechanistic role in fetal growth and metabolic programming is less studied. We evaluated the impact of maternal weight status on cord leptin and their associations with birth outcomes.

**Methods:** We included 638 women from the prospective mother-child cohort "Rhea" study in Crete, Greece with singleton pregnancies, providing cord blood serum samples and complete data on birth outcomes. Multivariable logistic and linear regression models were used adjusting for confounders.

**Results:** A 10ng/mL increase in cord leptin was associated with 151 g increase in birth weight ( $\beta$ -coef: 151.2, 95%CI = 93.5 – 208.8) and 1 kg/m<sup>3</sup> increase in ponderal index ( $\beta$ -coef: 1.0, 95%CI = 0.5 - 1.5), after adjustment for confounding factors. Maternal pre-pregnancy body mass index (BMI) >25kg/m<sup>2</sup> was a significant indicator of cord leptin ( $\beta$ -coef: 1.6, 95%CI = 0.5 - 2.7) and almost doubled the effect of cord leptin in birth weight ( $\beta$ -coef: 204.6, 95%CI = 122.7 - 286.5) compared to normal BMI women ( $\beta$ -coef: 113.7, 95%CI = 33.1 - 194.3).

**Conclusions:** High pre-pregnancy maternal BMI represents a significant determinant of cord blood leptin and enhances its association with fetal growth.

### **Controlling for bias concerning the participation status for the NEPS study within the school context using CART**

*Solange Koch, Christian Aßmann, Benno Schönberger, National Educational Panel Study, Germany*

Since large panel data sets on educational issues are despite tremendous efforts in field work almost inevitably plagued by missing data, for example, due to item nonresponse, development of appropriate multiple imputation techniques is necessary to allow for valid inferences incorporating the uncertainty about missing values. Sequential regression modeling is a widespread approach to generate multiple imputed data sets. The structure of multiple imputation algorithms is well suited for incorporation in MCMC estimation algorithms providing the analysis of primary interest. This paper implements an approach to approximate the full conditional distribution of missing values within a sequential regression setup. A non-parametric partition algorithm (CART) is chosen to mimic the full conditional distribution for missing values within variables also with nominal and ordinal scale. This approach is applied within a Binary Probit Model incorporating a measurement error for the dependent variable aiming at an analysis of unit nonresponse. Out-of-sample forecast criteria are used to gauge adequacy of non-nested model specifications. The proposed methodology allows providing inference on nonresponse rates even based on explaining variables with missing data.

The application of this procedure is presented on data from the National Educational Panel Study (NEPS).

### **Maternal smoking during pregnancy and adolescent smoking initiation and continuation. A prospective cohort study**

*Olena Lakunchykova, Tatiana Andreeva et al, National University, Ukraine*

**Background:** The present study seeks to confirm the association between smoking by mother during her pregnancy and tobacco smoking initiation by adolescents in the prospective study design.

**Methods:** This study is based on the data of the Family and Children of Ukraine Study (FCOU), which is a part of the cohort study in Europe for pregnancy and childhood "ELSPAC". Main exposure was smoking by mother. Smoking status of the adolescent and age of smoking initiation, reported at the 16-years-old follow-up, were outcome measures. Data were analyzed using multivariate binary regression model separately for boys and girls.

**Results:** Last wave of data collection gathered information about 1020 participants. In the gender-stratified analysis current smoking by boys was associated with smoking by mother, but not with smoking during her pregnancy. Smoking initiation was associated with smoking by mother during pregnancy for girls, but not for boys. Also, girls whose mothers smoked during pregnancy had twice higher odds (OR=2.38, 95% CI=1.10-5.12) to become a smoker during adolescence.

**Conclusions:** The influence of maternal smoking during pregnancy was significant only for girls. The possible explanation is that biological influences are more important for girls, but boys are more susceptible to social influences.

### **Improvement of child health in Europe: mother-child cohort resources for etiologic research**

*Pernille Larsen, Anne-Marie Andersen, University of Copenhagen, Denmark*

In the recent decades, a variety of mother-child cohorts have been established, and more are in progress. European mother-child cohorts have been established for different purposes, and may contribute to the etiologic understanding of childhood health and diseases, including effects of gene-environment interactions and behaviors on perinatal outcomes, childhood asthma/allergy, neuropsychiatric disorders, obesity, and metabolic health. In order to attain the full potential of the large amount of resources available, there is an urgent need for an integrated strategy for mother-child cohort research at a European level. As part of the pan-European CHICOS-project, one of the specific objectives was to make a searchable web-based inventory of existing mother-child cohorts.

At this stage, 65 cohorts have been registered, counting around 550.000 children. Many of the cohorts have provided detailed information on available data and timing at assessment. By the searchable function researchers can search for specific cohorts or exposures/outcomes, which have already facilitated collaborations across cohorts. Combing cohort data increases statistical power, address European diversity, and permits replication of findings. Together, this improves causal inference and makes it possible to study rare outcomes, such as congenital malformation, childhood cancer, and diabetes. Experiences from the work with the inventory will be presented.

### **Designing and implementing Audio-CASI data collection in the Growing Up in Scotland Study**

*Judith Mabelis, ScotCen, UK*

The poster will provide an overview of the design and development of a questionnaire in Audio-Computer Assisted Self-Interview (A-CASI) format with children aged 8 years old in the Growing up in Scotland study. Designing any questionnaire for young children requires special considerations. This project was particularly challenging because the mode of data collection, A-CASI, has not previously been widely used with children of this age.

Several rounds of testing were undertaken to develop and refine the instrument including cognitive interviews and field pilots. These aimed to:

- Understand the children's ability and reaction to using the computer to ensure that the questionnaire design, format and instructions were child-friendly;
- Understand the type of questions that children are able to easily answer in this mode, at this age, and test the comprehension of question items;
- Develop suitable procedures to administer the questionnaire with children in a large-scale survey setting, including gaining informed consent from the child.

The poster will present the main lessons we learned from this process, an overview of the strengths and limitations of using this method of data collection with children, and the implications of the approach for questionnaire design.

### **Standardised birth weight in females predicts all four domains of psychological well being assessed by the scaled GHQ-28 at age 49-51 years in the Newcastle Thousand Families Study**

*Kay Mann, Mark Pearce, Newcastle University, UK*

Early life has been associated with psychological health in many studies, however relative importance of these associations are often overlooked. We aimed to investigate lifecourse predictors of psychological well-being in the Newcastle Thousand Families Study. Detailed information was collected prospectively during childhood. At age 49-51 years, 574 participants returned questionnaires including the General Health Questionnaire (GHQ) version 28 and one on health and lifestyle. The GHQ four domains were collated, total GHQ-score calculated with a cut off of 24 identifying 'caseness'. Scores and explanatory variables were analysed using linear, logistic regression and path analysis. Total GHQ-score in females was associated with standardised birth weight, marital status, long-term illness and physical activity. Total GHQ-score in males was associated with childhood IQ, long-term illness and physical activity. In females, standardised birth weight was positively associated with all domains and 'caseness'. Increasing duration breast fed decreased odds for males being cases. Standardised birth weight had similar importance to factors later in life. Standardised birth weight was significantly associated with psychological well-being in this cohort, albeit in the opposite direction to expected. Our findings suggest that both ends of the birth weight spectrum may be of interest and sex differences should be further investigated.

### **Results from a birth cohort in the North-East of Italy**

*Annalisa Montante, L. Cestari et al, University of Padova, Italy*

According to several studies, parental background and the events occurring during pregnancy and early stages after birth are crucial for the short and long-term health status in offspring.

In the Italian North Eastern region, Friuli Venezia Giulia, a cohort of 186,529 children born between 01/01/1989 and 31/12/2009 has been identified from the birth assistance certificates (CeDAPs) which collect information on the newborn and the pregnancy, as well as on parental social characteristics.

Data obtained from the CeDAPs were linked to medical records (death certificates). A multivariate logistic regression analysis was conducted and two models (one for each outcome) were tested including selected variables, such as: parents' socio-demographic characteristics, pregnancy history, type of delivery and labour.

Concerning infant mortality, paternal age < 25, a number of obstetric ultrasonographies > 5 seem to be risk factors. Among newborn-related characteristics, male sex, malformations, APGAR scores, the access to an intensive care unit or the need of reanimation seem also to be risk factors; whereas the year of birth appears to be protective. Concerning the mortality risk > 1 year, most of factors become not statistically significant, except for the sex and the year of birth. Besides, the maternal low grade of education becomes a risk factor.

The study confirms the role of newborn health characteristics and the social background on infant mortality risk.

### **Family socio-economic disadvantage and bullying in childhood: the role of reading and non-verbal ability**

*Constantina Panourgia, Olympia Palikara, Institute of Education, UK*

There has been a substantial interest in the examination of the relationship between family socio-economic disadvantage and bullying in schools. However, there is still a dearth of information concerning factors that may moderate this relationship. Using longitudinal data from the first four waves of UK's Millennium Cohort Study (MCS) the present study explored the relationship between continuous family socio-economic disadvantage (waves 1-4) and bullying at the age of 7 and how it can be moderated by achievement in reading and non-verbal ability. In 2008 when the MCS children were around 7 years old, they were asked (n=13,244) to report the incidence of victimization in school. Twins and triplets were excluded from our final study sample (n=13,066). With regards to the valid answers (i.e. excluding not answered or not-applicable answers), 9.1% of the children reported that they are bullied all the time and 39.6% that they are bullied some of the time. The findings provided evidence for a strong relationship between continuous family socio-economic disadvantage and bullying in childhood. Our model suggested that, after adjustment for child covariates such as child's age, gender, self-regulation (independence, emotional dysregulation, cooperation) and total difficulties, (wave 4), non-verbal ability acted as a vulnerability factor in the relationship between family socio-economic disadvantage and bullying. Moreover, it was found that reading ability neither buffered nor dampened the effect of family socio-economic disadvantage on bullying.

### **Predictors of childhood physical activity: The Gateshead Millennium Study.**

*Mark Pearce, L. Basterfield et al, Newcastle University, UK*

It is important to know what, potentially modifiable, factors may influence physical activity (PA) in children. We studied this in the Gateshead Millennium Study (GMS), a population-based cohort of 1029 infants born in 1999-2000 in Gateshead. Throughout infancy and early childhood, detailed information was collected. Assessments at age 9 yrs included body composition, objective measures of habitual PA (using accelerometers). Mean total volumes of PA (accelerometer count per minute, cpm) and moderate-vigorous intensity PA (MVPA), and the percentage of time spent in sedentary behavior (%SB) were analysed within path models, including direct and mediating associations.

Sex and seasonal differences were seen in all three outcome variables ( $p < 0.001$ ). Restricting children's television access increased MVPA. Increased paternal age was associated with significant increases in %SB. Increased time in out-of-school sports clubs was significantly associated with decreased %SB. No significant associations were seen with birth weight.

A range of factors, directly or indirectly, influenced PA and %SB in these children. However, associations differed between the different constructs of PA and %SB. Exploring further the sex differences in PA would appear to be useful, as would encouraging children to join out of school sports clubs and reducing time watching television or playing electronic games.

## Day 2 – Tuesday 30<sup>th</sup> October 2012

### Keynote

From 11 to 90: following up the Scottish Mental Surveys of 1932 and 1947

*Ian Deary, University of Edinburgh, UK*

Scotland tested the intelligence of a whole year-of-birth, twice. On 1<sup>st</sup> June 1932 almost every child born in 1921 took the same general mental ability test. The exercise was repeated on 4<sup>th</sup> June 1947. These were the Scottish Mental Surveys of 1932 and 1947. They were largely unused between the late 1960s and the late 1990s. Beginning in the late 1990s, our teams of researchers have been following up the Scottish Mental Surveys to conduct studies in cognitive ageing and cognitive epidemiology. Following up the individuals who took part in these surveys and now live in the Edinburgh area—the Lothian Birth Cohort studies of 1921 and 1936—has offered an opportunity to study the determinants of lifetime cognitive ageing differences. This talk will outline how participants of the original surveys were recontacted, and concentrate on some of the recent results which their follow up has produced. Among the factors that will be considered with respect to people's differences in cognitive ageing will be social, health, fitness, brain imaging, and genetic factors. The talk will also give an overview of a new, Scotland-wide follow-up study: of the 6-Day Sample of the 1947 Survey. They were individuals who has been followed up between age 11 and 27, but not since the early 1960s.

### Symposium

**Initiatives used to actively encourage participation and mitigate attrition in the ALSPAC cohort**

**Convenor: Larisa Duffy**

#### **ALSPAC's data collection**

*Larisa Duffy, ALSPAC, University of Bristol, UK*

ALSPAC has expanded from research about study children (who are now 20 years of age) to studying mothers, fathers, siblings and offspring. The paper will give an overview on the extensive data collected to date from the above cohorts, the methods, responses and attrition rates. The primary methods of data collection have been through participants attending our research clinic and postal self-completed questionnaire. Response rates had been particularly good in the first few years but the attrition rate reached its peak when the study children were 15-16 years old. The current and future plans will be presented and discussed together with the logistical challenges and ways of overcoming them, including outreach clinics, home visits and the 'bring a friend' financial initiative.

#### **ALSPAC's tracking and tracing strategy**

*Issy Bray, Pei Tse, ALSPAC, University of Bristol, UK*

During 2012, ALSPAC has been piloting a 2-phased tracking strategy to re-engage 'lost' participants back to the study. ALSPAC's tracking strategy, loosely based on the approach used by both Millenium Cohort Study (MCS) and Growing Up in Scotland (GUS) study, is both 'office-based', and 'community-based'. Office-based tracking accesses commercial and government databases to find addresses for lost participants. Community-based tracking involves visiting the same group of participants in their homes to encourage them participate in Children of the 90s once again. We conducted an RCT to determine whether an opt-out or opt-in consent method is preferable for consenting to home visits. We will discuss the preliminary findings and outcomes of the pilot, including the successes and challenges of both stages of the strategy. We will also discuss how ALSPAC will proceed with its tracking strategy moving forward from the pilot.

### **ALSPAC's advisory panels**

*Verity Waine, ALSPAC, University of Bristol, UK*

In 2006 ALSPAC recruited members of its young cohort to join an advisory panel, known as TAP. In the past six years TAP members have been asked to advise on study documentation, data collection proposals and study design; members sit on the study's ethics committee and frequently share their opinions about the future of ALSPAC. In this presentation we will describe how TAP has developed over the last six years, exploring the challenges faced and the success achieved. We will evaluate the impact of TAP not only on the projects they have directly advised on but also on the wider organisation. We will also discuss more recent developments, based on the TAP model to engage fathers, mothers and COCO 90s (Children of Children of the 90s) participants.

### **Factors influencing response to ALSPAC questionnaires**

*Issy Bray, ALSPAC, University of Bristol, UK*

Attrition in child cohort studies is an increasing problem which may bias study findings and limit generalisability, as well as reducing sample size. Research to date has focused on individual and family characteristics within a study (e.g. low income and educational level), and reviewed across studies the effect of organisational factors (e.g. sampling method) and methods used to improve retention (e.g. incentives and reminders). This talk describes initial findings from an analysis of responses to ALSPAC questionnaire data. It brings together information about individuals, families and aspects of the questionnaire administration, such as length of questionnaire and reminders. A multilevel logistic regression model is used to analyse response data based on a total of over 600,000 invitations for 58 different questionnaires administered at different time points to different groups of participants (mothers, young people, fathers). This allows the effects of the modifiable study design factors to be assessed, controlling for individual effects and length of follow-up.

### **Are single mother families bad environments for children?**

*Jan Nicholson, Fabrizio D'Esposito et al, Parenting Research Centre, Australia*

Background: Children in single parent families fare more poorly than children living with two parents, with most explanations assuming a casual role for compromised parenting and parental mental health. This paper aims to i) assess whether single mothers report poorer parenting and greater psychological distress than couple mothers, ii) determine the extent to which these differences are accounted for by a range of child, sociodemographic, employment, family, and environmental factors, and iii) explore how associations vary by child age and duration of single parenthood.

Methods: Data from the Longitudinal Study of Australian Children were compared for single (n=994) and couple mothers (n=7562) when their child was aged 4-5 years and 8-9 years.

Results: Single mothers were 1.5 times more likely to experience parenting difficulties ( $p < 0.001$ ) and 3 times more likely to experience psychological distress ( $p = 0.001$ ) than couple mothers. Differences in parenting were fully eliminated and differences in psychological distress were reduced when socioeconomic and environmental challenges were accounted for. Relationships with duration of single parenthood were complex.

Conclusions: Single mothers were not worse parents than couple mothers when those living in similar circumstances were compared. The changing nature of stressors for single mothers will be discussed.

## **Family structure change and economic well-being in Europe**

*Karen Robson, York University, Canada*

The number of single-parent families varies considerably across the European Union— from around five percent of all households in Denmark to just over 20 percent in Latvia (OECD Family Database, 2010). A considerable body of literature on the outcomes associated with lone parenting has also developed, particularly over the last ten years. A meta-analysis of the impact of being raised by a sole-parent (rather than two biological parents) was carried out recently by Chapple (2009), who examined 122 studies from a variety of OECD countries (not including the United States). His overall finding was that lone parenting had a small but negative effect on child well-being, but his results also came with the important caveat that meta-analyses cannot provide a consensus on why that might be. The causal mechanism is therefore likely a complex one.

In this paper, I will present cross-national results of family structure changes on the economic well-being of mothers with children. This paper contributes to the literature in two important ways. First I examine the change in the same families over time – something that is only possible with panel data. Second, I provide cross-national results so that outcome differences can be compared across welfare regimes. Single country longitudinal analyses of family structure change in the US (Carlson and Corcoran, 2001), Sweden (Johnsson and Gahler, 1997), the UK (Robson, 2010) and Canada (Wu and Schimmele, 2008) on the general well-being (economic and psychological) of children have produced the general finding that deviations from the two parent (often biological) family form have a negative impact on various outcomes associated with child well-being, including socioeconomic conditions. While we can piece together single country studies and make inferences about country differences, to date no systematic longitudinal cross-national analysis has been published on this topic.

## **Do siblings help or hinder child development? Evidence from the UK Millennium Cohort**

*Elise de la Rochebrochard, INED, France, Heather Joshi, Institute of Education, UK*

**Context:** Child development has been described as strongly related to parental economic and time investments in their child. Under such a model, siblings “compete” for parental resources and are considered as a hindrance for child development. However, having siblings could also bring benefits.  
**Objective:** To explore the association between having siblings and child development.

**Data:** The Millennium Cohort Study included 19,244 UK families with children born in 2000-2002. Families were interviewed when the cohort child was 9 months, 3, 5 and 7 years. The child’s development was measured in terms of cognitive, verbal and behavioural outcomes. The impact of number of siblings on the risk for a child to fall into to the bottom 10% of the distributions of these developmental outcomes was explored.

**Results and Discussion:** Number of siblings increased over time. The probability of being in the bottom 10% of the developmental distributions is higher when the cohort child had at least 2 siblings. It is also higher if the cohort child is a boy, and particularly, if the mother is less educated. Being an only child was also less favourable than being in a two-child family (having just one sibling), on some of the outcomes (especially those measuring cognitive development).

## **Maternal union status and youth educational attainment: Does age at birth matter**

*Sharon Sassler, Kristi Williams et al, Cornell University, USA*

In 2008, 41% of all births in the United States occurred outside of marriage. Children born to unmarried mothers are often disadvantaged in young adulthood, including being less likely to graduate high school. In recent years, the age composition of mothers has changed; teen births declined substantially, and non-marital births are now most heavily concentrated among women in their twenties. This paper examines whether maternal age at birth differentiates the educational outcomes of children, and if this varies by maternal marital status. Data are from the linked Children



and Young Adult sample of the 1979 National Longitudinal Survey of Youth (NLSY79). We find significant differences in the likelihood of high school graduation among youth born to a never-married versus a married mother. These disparities remain even after including controls for maternal age at birth, as well as social and economic characteristics of mothers prior to the birth. The marital status gap in the likelihood of graduating from high school among youth born to older mothers is far narrower than for youth whose mothers were either teenagers or in their early 20s when they were born, though this finding is limited to white youth. Impacts for racial educational disparities are discussed.

### **Round Table The threshold of adult life**

**Convenor: Ingrid Schoon**

#### **Effects of private schooling on educational (related) outcomes in longitudinal perspective:**

##### **Evidence from Northern Europe**

*Christoph Homuth, University of Bamberg, Germany*

There is a great amount of literature on the educational outcome differentials of students in public and private schools. Previous studies indicate that private schooling may have positive effects (for a summary of different findings cf. Dronkers/Avram 2010). An often common weakness of existing studies is that inferences are drawn from cross-sectional data which impedes causal explanation.

This study contributes to the debate about the influence of the school sector on educational outcomes by using Danish PISA-Longitudinal dataset. It consists of the Danish sample of the PISA 2000 study as baseline and a follow-up interview that was conducted in 2004 with a focus on the choices of education and training that have been made after compulsory education (nine years of schooling). To cope with panel attrition multiple imputation is used and to control for selectivity of the school choice propensity score matching is used.

Although earlier finding suggest that students of private schools perform lower than students on public schools results (Dronkers/Robert 2008) of multilevel logistic regression analyses suggest that their lower performance does not lead to much different educational attainment in terms of upper secondary education enrollment. As private schools often meet special educational policy needs, e.g. secondary education in rural areas, this can be seen as a positive result.

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#### **Gendered transitions into adulthood and beyond: Interrelationships between education and employment over 22 years in Canada**

*Lesley Andres, Judith Offerhaus, University of British Columbia, Canada*

In this paper we examine the life courses of individuals from late adolescence into adulthood over a time span of 22 years to investigate age-related education and employment transitions, especially in regard to their multidimensional and intertwined patterns. We focus on these two most influential factors in the reproduction of social inequality and societal stratification and also take up the debate about the de- and – more recently – re-standardization of life course patterns (Kohli 1985, 2007). We examine specifically the gendered patterns of educational achievement and pathways leading into the labour market. Esping-Andersen (2009) refers to these changes in life course dynamics for women as nothing short of revolutionary.

We use the Canadian Paths on Life's Way longitudinal data (Andres 2002a, 2002b, 2002c) and employ the techniques of sequence and cluster analyses to (1) examine individual biographies related to educational and occupational achievement and (2) map detailed month by month

information over 22 years on the exact pathways through which individuals attended different types of institutions of post-secondary education (e.g., university, community college, university college, or technical-vocational training institutes). We expect to find evidence of the impact of embarking on differing institutional pathways through the system of post-secondary education, hence resulting in distinct trajectories and life course patterns. In turn, nature and sequence these pathways lead to different educational careers and transitions into employment point toward educational path-dependency and cumulative advantage and disadvantage (Dannefer 2003, O'Rand 2000, 2009).

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#### **Transition processes from care to an independent life**

*Anne-Kirstine Molholt, Aalborg University, Denmark*

This paper focuses on the possibilities of following vulnerable young people through transition processes using qualitative research. My PhD-study is concerned with young people leaving out-of-home care to start an independent life. As other young people they undergo transition processes from youth to adulthood. However, unlike their peers young people leaving out-of-home care also experience transitions from being in care to living an independent life. They seldom have a network of close adults to support them during the transitions and they often undergo the transitions in an earlier age compared to other young people. To learn about the meanings the young people ascribe to the transition and the techniques they use when leaving out-of-home care, I will draw on different types of qualitative methods. One of the main approaches used in the study is repeated interviews over a period of three years with 10-15 young people during their transitions to an independent life. I am aware that they are a potentially difficult group to get in contact with and not least keep in contact with during the interview period. I therefore find it relevant to discuss how we can secure the participation of vulnerable groups in repeated studies.

#### **Great expectations: channels and barriers to university education**

*Laura Fumagalli, University of Education, UK*

Studying the reasons why people choose to stay in education is crucial for a society which wants to boost mobility by removing the barriers to a wider access to knowledge. However, no investment is worth in this respect if expectations are not responsive to changes in the information set.

Recent work analyzes whether people update their expectations when new signals are observed, but such a literature is either experimental or based on small selected samples, which makes external validity questionable. On the other hand, the literature using survey data finds it difficult to separate educational expectations and aspirations.

This paper uses the longitudinal study of young people in England (LSYPE), together with a rich set of administrative data at the individual and at the school level, to investigate whether people update their educational expectations. The question wording used by LSYPE has the unique advantage of

separating educational expectations from educational aspirations. Unfortunately, due to its question routing, the survey fails to collect expectations for the full sample and potentially endogenous selection is introduced. This paper suggests a method to overcome this shortcoming.

### **What's the link between household income and going to university?**

*Jake Anders, Institute of Education, UK*

The association between household income and university entry is a matter of clear academic and policy interest. This paper sheds new light on the matter using the LSYPE, a recent longitudinal survey from England. While those in the top income quintile group are more likely than those in the bottom quintile group to attend university (66% vs. 24%), much of this gap is explained by earlier educational outcomes. The paper also examines admissions decisions in more detail, separating applying from attending. This analysis yields results suggesting most of the difference in participation rates is driven by the application decision. The attendance gap conditional on having applied is much smaller (85% vs. 68%) and closes completely when earlier educational outcomes are taken into account. Finally, the paper considers attendance at high quality Russell Group universities. By contrast with the main analysis, the Russell Group attendance gap persists even among those who attend university. The findings suggest policy aimed at reducing the university participation gap at point of entry face small rewards. More likely successful are policies aimed at closing the application gap, for example encouraging a wider cross-section of the population to apply and ensuring they have the necessary qualifications.

### **How does the social become biological?**

*David Blane, Imperial College London, UK*

How, for example, does social class, which is an historically specific form of social organisation, get into the molecules, cells and tissues of the body to produce social class differences in life expectancy and cause of death? The presentation will suggest a model for thinking about such social-biological transitions in terms of social exposures, biological pathways and their cumulation & interaction across the life course. Four aspects are considered important. Each type of social exposure can work through any or all of the biological pathways. Both exposures and pathways can cumulate and interact. The relative importance of an exposure or pathway can vary with the stage of the life course. Exposures and pathways can be negative (hazards; pathology) or positive (resilience; optimal growth & development). The model should be compatible with rapid demographic change, particularly the large fall during the past 40 years in middle age mortality rates affecting most of the most prevalent causes of death. These ideas will be illustrated using JN Morris's estimation of minimum incomes for healthy living.

### **Early and current socio-economic position and cardiometabolic risk factors in the Indian Migration Study**

*Ulla Sovio, Claudia Giambartolomei et al, London School of Hygiene and Tropical Medicine, UK*

Low socio-economic position (SEP) is associated with cardiometabolic risk factors in developed countries throughout life course, but in developing countries the direction and strength of these associations is unclear. This study estimates the associations of early and current SEP on adult cardiometabolic risk factors (systolic blood pressure (SBP), body fat and HOMA score) in the Indian Migration Study (N=7,067) conducted in 2005-2007, using linear mixed models. High current SEP was associated with 1.2 (95%CI 0.2-2.2) mmHg higher SBP in males. High early and current SEP were associated with higher body fat in both genders, current SEP dominating the associations: 3.9 (3.5-4.2) and 2.9 (2.5-3.3) %-units higher body fat in high current SEP group in males and females, respectively. High early SEP was associated with 10 (4-18)% higher HOMA score in males, and high current SEP with 30 (22-38)% and 14 (7-22)% higher HOMA score in males and females, respectively.

In conclusion, higher SEP, particularly in adulthood, was associated with worse cardiometabolic risk factors in an Indian population undergoing the epidemiological transition, in contrast to developed countries. Public health interventions to prevent cardiovascular disease need to consider SEP over the life course.

### **Does early life influence kidney function at age 63-64 years? The Newcastle Thousand Families Study**

*Mark Pearce, S Harrison, Kay Mann, Newcastle University, UK*

It has been suggested that intrauterine growth restriction (IUGR) can affect kidney development, resulting in fewer glomeruli being formed and may potentially have long-term consequences. We investigated early life variables in relation to adult kidney function, and compared these to the influence of later life variables, within the Newcastle Thousand Families Study. A comprehensive set of information was collected prospectively regarding 1142 babies, born in 1947. At the age of 63-64 years, participants completed a lifestyle questionnaire and attended a clinical examination, of which 335 participants had their glomerular filtration rate (eGFR) estimated. Body mass index (BMI) ( $p=0.003$ ) and being female ( $p=0.010$ ) were significantly negatively associated with eGFR. Birth weight ( $p=0.016$ ) and cigarette pack-years smoked ( $p=0.004$ ) were significantly positively associated with eGFR. BMI ( $p<0.001$ ), sex ( $p=0.012$ ) and birth weight ( $p=0.022$ ) remained in an adjusted model. The findings suggest that sex, size at birth, BMI and cigarette smoking may be important variables influencing adult kidney function. However, only a small amount of variance in eGFR was explained by these variables; therefore, additional longitudinal studies would be beneficial for assessing lifecourse influences of kidney function.

## **Poster Session 2**

### **The School Cohorts of the National Educational Panel Study: Challenges in Getting Access to a Multicohort-Sample of Students**

*Sonja Meixner, André Müller-Kuller, National Educational Panel Study, Germany*

One of the main remits for the German National Educational Panel Study (NEPS) is to collect data on educational processes and competence development of students in schools. The set-up of three school cohorts, i.e. the cohorts of 1st-, 5th- and 9th-graders, is exceptionally challenging. In Germany, access to schools and their students requires a permission by the Ministry of Education of each federal state. In this context, the longitudinal design of the NEPS and its claim to maintaining cross-cohortal coherence provide challenging tasks, particularly with regard to obtaining access to schools and requesting authorization of instruments in each wave. During the negotiation processes with the ministries, various – sometimes competing – interests need to be brought in line. The aim of the NEPS was to sample about 6,900 1st-graders, 6,800 5th-graders and 13,500 9th-graders. Their parents, teachers and headmasters were also requested to participate in the study to receive important context information about our target persons. After three years of NEPS-fieldwork, we will present some central aspects of the negotiation processes with regard to participation rates of students and parents in our samples. Finally, we will give an outlook on our expectations for future waves.

### **The Kindergarten Cohort within the National Educational Panel Study – Recruitment and Participation in a Longitudinal Study**

*Ina-Sophie Ristau, Thomas Bäumer, National Educational Panel Study, Germany*

One of the six representative starting cohorts within the German National Educational Panel Study (NEPS) is the kindergarten cohort which started in 2011 with a sample of 3,000 four-year-old preschool-children. All sampled children had to attend early childhood institutions in Germany and were supposed to get enrolled in primary school in two years of time. Besides the children, the parents, the kindergarten teachers and the kindergarten heads are also integrated in the survey to give valid information about the children's learning environments. These context persons also give information on children's characteristics because children at such a young age cannot be asked about their background and living conditions in person. This presentation is going to show how the recruitment of institutions, children and context persons proceeded and what kinds of challenges the study had to face during the process. Besides, it will also highlight the restrictions and obstacles arising from the longitudinal design of the NEPS within the kindergarten cohort. The actual sample size of children and context persons as well as the experiences from the first wave will be illustrated. Finally, the plans for tracing and following the children into primary school will be discussed.

### **Competence Measurement and Test Administrator Training in the Kindergarten Cohort of the National Educational Panel Study**

*Sabine Weinert, Karin Berendes, National Educational Panel Study, Germany*

A comprehensive standardized, reliable and valid measurement of competencies represents a major challenge in longitudinal, educational, large-scale studies. Hereby, the selection of test domains and testing procedures depends, among other things, on the age of the sample under study. Data collection with preschool children poses, for instance, the challenge that some educationally relevant competencies, e.g. reading, can only be measured via precursor variables. Moreover, data collection in preschool must be accomplished in a playful way. At the same time, a high standardization of the testing situation – as in every data collection – is a fundamental prerequisite for valid data. Such requirements can only be fulfilled by well-trained test administrators. That presupposes a well-founded and systematic training of test administrators. In the talk theoretical considerations

concerning the measurement of competencies in the child cohort of the German National Educational Panel Study (NEPS; N=3,000 children at age 4; N=2,800 at age 5) will be presented. Challenges, e.g. concerning a coherent measurement of relevant competence domains as well as practical aspects of test administration and administrator training, will be outlined and discussed with respect to theoretical and practical implications.

### **Differing lifecourse associations with sport, occupational and household based physical activity at age 49-51 years: The Newcastle Thousand Families Study**

*Kay Mann, Mark Pearce, Newcastle University, UK*

Background: Beneficial effects of physical activity on health are well known. Our aim was to investigate relative contributions of a range of factors from across life to variations in different types of physical activity in the Newcastle Thousand Families Study at age 49-51 years.

Methods: At age 49-51 years, 574 study members returned questionnaires, including details of physical activity (occupational, commuting, household and sport). Factor analysis activity types produced two retained factor scores, 'sport' and 'other physical activity' analysed by path analysis.

Results: More advantaged current social class, higher education level and not smoking were associated with increased sport activity, but not non-sport activity. Males had higher levels of occupational and lower levels of household activity than females. Smokers and the middle social class group had increased work activity. Long-term illness was associated with lower activity across all types. Current social class and smoking showed the highest relative contribution for 'sport' and long-term illness for 'other physical activity'.

Conclusion: There are barriers to achieving advisory physical activity levels, especially in those less affluent, less educated and with impaired health. Increasing adult activity requires better understanding of the barriers and long-term strategies regarding affordable and available activities.

### **Trajectory analysis of loneliness and life events: using group-based trajectory models**

*Tamoo Nakata, Hokusei Gakuen University, Japan*

The aim of this study is to examine the differences in feeling of loneliness trajectories and its factors among elderly Japanese people using group-based trajectory models.

This study employed the National Survey of the Japanese Elderly, from wave I (1987) to wave IV (1996), which was conducted by Michigan University and Tokyo Metropolitan Institute of Gerontology. The independent variable was a set of dummy variable of loneliness and age was used as an independent variable. Education, gender and self-rated health are used to identify the factors for the group division. And time dependent covariates were occupational status and marital status, which were measures of the life events.

The results of this analysis are as follow; 1) Dividing into two groups was adequate in this analysis through the goodness of fit tests. 2) Those groups showed quite different trajectories. One trajectory showed very low and unchanged through their life and the other is decline with age. 3) Those differences were generated by not gender but educational achievement. And though for the first group, occupational status, marital status and SRH

affect loneliness positively, for the second group, occupational status did not have a significant effect.

### **The effects of participation in public childcare centers: evidence from Chile**

*Grace Noboa-Hidalgo, Sergio S. Urzua, University of Maryland, USA*

This paper studies the effectiveness of a publicly funded preschool program targeting low-income populations in a developing country. Using a unique longitudinal dataset and administrative records from Chile, we conduct an empirical analysis to estimate the effects of participation in public childcare centers on child cognitive and socio-emotional development. A major expansion of childcare provision by the government enhances our identification strategy.

Based on instrumental variable and control function approaches, which allow for heterogeneous treatment effects and endogenous selection into childcare, our results suggest that participation in public childcare centers generally improves early child development. Consistent with the recent literature, we find robust positive effects mainly in the area of emotional regulation. However, our results also suggest potentially severe negative effects on child-adult interactions. Overall, our findings confirm the benefits of early interventions but raise awareness on the importance of securing quality when increasing coverage.

### **Participation patterns in the 11-year follow-up of the Danish National Birth Cohort**

*Filippa Norsker, Anne-Marie Andersen, University of Copenhagen, Denmark*

The Danish National Birth Cohort (DNBC) was established in 1996 in order to create a data source, designed for studies of disease etiology using a life-course perspective with emphasis on the early phases of life. More than 100,000 pregnant women were recruited to the DNBC between 1996 and 2002, more than 90,000 were interviewed regarding own and offspring health twice in pregnancy and when the child was 6 and 18 months. The offspring have now formed a conception-to-death-cohort, characterized by comprehensive data collection: a biobank, prospectively collected exposure data, and active linkage to health outcomes (diagnoses and treatments). In 2010, a 7-year follow-up of the children, using postal questionnaires to the mothers, was accomplished.

The preadolescent years represent a developmental stage with profound cognitive, physical, and emotional changes. The body transforms, peer pressure intensifies, the independence increases and the analytical skills improve. It is also a period of specific bodily susceptibility. Research demonstrates that attitudes and behaviors during these years can have lasting effects into adulthood. At 11 years, the children's cognitive abilities allow them to contribute independently to assessments of exposures, development, and especially their psychological wellbeing. Consequently, an 11-year follow-up of the children has been launched, including separate web-based questionnaires to the parents and to the 11-year old child, the latter called Club11.

The Danish health registers provide complete follow-up of the cohort, and as such, we have avoided loss-to-follow-up, which is the main threat to long-term studies in other countries. Still, continuous collection of exposure data and non-registered illness through active contact with the participants are necessary. Participation patterns of parents and offspring in the 11-year follow-up will be presented.

### **Pre-conception predictors of early childhood social and emotional development: A 30 year longitudinal study of grandparents, parents and children**

*Craig Olsson, Ann Sanson, Royal Children's Hospital, Australia*

The demography of parenthood has shifted strikingly over the past 50 years with maternal age at first child birth increasing by close to two decades in many developed economies. In Australia, the median age of first time mothers is now 28.9 years and the median age of woman from all births is 30.7 years. The same trend to higher maternal ages at birth has happened in other OECD countries. Little is known about the implications of this greatly extended pre-conception period. The purpose of this paper is to describe the study design of, and present preliminary findings from, a new offspring cohort emerging from one of Australia's most mature life course resources: The Australian

Temperament Project (ATP). The ATP commenced in 1983 as a representative sample of 2443 parents (G1) and infants (4-8 months, G2). The sample has since been followed at ~2 year intervals across 30-years (15 waves). Offspring (G3) are now being assessed in pregnancy (32 weeks), at birth and 12 months postpartum. Early findings on potential modes of intergenerational transmission will be presented, with a particular focus on the G1-G2 relationship and G3 social and emotional development at 12 months. Implications for future research will be discussed.

### **A study of the long-term health effects of family background and health behaviors across cohorts and gender**

*Gabriella Olsson, Stockholm University, Sweden*

Among adolescents the social gradient in health tends to be small. Many health behaviours are, however, adopted at this period in life, behaviours that in turn are socially patterned and which will be highly influential for health status as adults. In this cohort based study we explore the relation between a composite measure of socioeconomic family background and adult self-rated health (SRH) and health behaviours in adolescents. We also examine how these associations change over two different cohorts. A sample of 813 individuals aged 15-20 in 1968 respectively 1981 is used. Data is derived from different waves of the Swedish Level of Living Surveys (LNU). LNU is based on interviews with representative samples of the Swedish population. Preliminary results indicate a significant effect of a disadvantaged family background on SRH (OR 1.49 95% CI=1.06-2.11) and smoking (OR 1.60 95% CI=1.22-2.12). Results also indicate that the effect of family background on both SRH and smoking is more pronounced in the younger cohort and especially among the women in this cohort. Moreover, we find that smoking and alcohol consumption attenuate the effect of family background on SRH with around 18 percent, measured as reduction in OR.

### **Number of siblings and maternal time investments in preschool children: resource dilution or resource augmentation?**

*Magdalena Osmanowski, Andrés Cardona, Bielefeld University, Germany*

Research on family size and inequality suggests a negative relationship between resource availability within the family and sibship size as an explanation for unequal outcomes among siblings (resource dilution theory). However, the inverse connection between resources available for each sibling and sibship size is usually assumed and rarely measured. In this paper we address this issue by comparing levels of maternal time investments in preschool children across households with different sibship size. Our data consists of two pooled datasets obtained from the GSOEP (2003-2010) with children observed at age 2-3 (N=1.338) and age 5-6 (N=661). We operationalize maternal time investments as the self-reported time spent by mothers with their child in various activities inside and outside the household. Results using multilevel analysis offer mixed support for the resource dilution hypothesis and tell a cautionary tale about assuming without qualification a negative relationship between family size and resource availability inside the family. Relative to children with no siblings, maternal time investments seem to be lower for children with older siblings but higher for children with younger siblings. Hence from the perspective of preschool children a bigger sibship size appears to be associated with both resource dilution and resource augmentation depending on birth order and age of siblings. Possible explanations for this apparently paradoxical result are offered.



## **Life and occupational aspirations of UK primary school children**

*Vanessa Moulton, Institute of Education, UK*

Little research has been conducted on primary school children's aspirations, most previous work focusing on adolescents. During wave four of the UK's Millennium Cohort Study (MCS) when children were around 7 years old they were asked (n=13,244) to write down what they would like to be when they grow up. We coded responses using a variety of approaches to understand the type, level, gender typicality and occupational typologies of their aspirations.

Most (81.8%) children gave only one aspiration – 5.7% gave two, 1.8% three or more and 10.8% did not know, did not respond or their responses were difficult to interpret. Of those who gave a valid response the majority (96.4%) of first aspirations were occupational, 2.5% descriptive e.g. tall, rich, happy, an adult and 1.1% fantastical e.g. a fairy, a superhero, a princess. A wide variety of occupational aspirations were given, the most popular were sports person (15.7%), teacher (12.7%), police (7%), vet (6.4%), entertainer (4.5%), hairdresser (4.4%), and doctor (4.4%). Few (4.7%) mentioned extrinsic aspirations for financial success, image, or popularity. Most occupational aspirations were gender specific - the most popular for boys were sports person (27.4%) and policeman (11.4%), while girls aspired to be teachers (22.6%), vets (11.2%) and hairdressers (8.8%). Girls' occupational aspirations were higher than boys, when coded by both skill level and specialisation (Standard Occupational Classification, SOC 2000) and socio-economic position (National Statistics – Social-economic Classification (NS-SEC). However, overall occupational aspirations for seven years olds were high – three-quarters (78%) aspiring to professional, associate professional and technical skill levels (codes 2 and 3, SOC2000) and two-thirds (65.5%) aspired to be in managerial and professional occupations (codes 1 or 2, NS-SEC, Eight class).

We used Holland's Occupational Typologies to investigate aspirational domains – the most popular overall (40.8%, and for each gender (45.4% boys and 36.4% girls) was Social (helping or serving others through personal interaction), other typologies were more gender specific. Boys (30.5%) were more likely to have Realistic (manipulation of objects, machines, tools etc) aspirations, whereas girls typologies were varied – 20% were Investigative (like to observe, learn, investigate and analyse), 19.8% Artistic (innovating, intuitional, imaginative and creative) and 15% Enterprising (influencing, persuading, leading and managing).

## **Early predictors of primary school children's occupational aspirations**

*Constantina Panourgia, Eirini Flouri, Institute of Education, UK*

Using data from the first four waves of the UK's Millennium Cohort Study (MCS) we investigated the role of child and family level predictors of the occupational and life aspirations of 7-year-old children. In 2008 when the MCS children were around 7 years old, they were asked (n=13,244) to write what they would like to be when they grow up. The occupational aspirations were coded into the 9 groups of the Standard Occupation Classification 2000 (SOC2000). We also coded the masculinity/femininity of the aspired occupations using the percentage of working age women in the UK in 2008. The determinants considered were child's age, ethnicity (non-white/white), earlier (wave 3) total difficulties, achievement in mathematics (wave 4), father's and mother's highest qualification ever (waves1-4) achieved, father's and mother's highest social class ever (waves1-4) achieved, maternal and paternal attitudes to gender roles (wave 1), and family poverty (waves 1-4). As regards the femininity/masculinity of aspirations: in boys lower maternal and lower paternal qualifications were associated with more masculine occupations, as were mother's positive attitudes to gender roles. Girls' femininity/masculinity of aspirations was not associated with any of these variables. As regards the SOC of the children's aspired occupation, non-white boys and boys scoring higher on the mathematics test tended to have higher occupational aspirations. In girls, non-white ethnicity and higher paternal qualifications were positively associated with higher occupational aspirations.

## **Childhood infectious disease and risk of premature death from cancer: A prospective cohort study**

*Mark Pearce, P. Tennant et al, Newcastle University, UK*

This study utilised longitudinal data from the Newcastle Thousand Families Study, a prospective cohort of 1142 individuals born in Newcastle-upon-Tyne (UK) in 1947, to assess the impact of various childhood infectious diseases on cancer mortality between ages 15 and 60 years. Detailed information was collected prospectively at birth and during childhood on a number of early life factors. Deaths from cancer between ages 15 to 60 years were analysed in relation to childhood infections, adjusting for potential early-life confounders. Childhood history of influenza and of measles, were independently associated with a lower risk of cancer-related mortality (adjusted hazard ratio, aHR=0.39, 95% CI: 0.17-0.88, p=0.03 and aHR=0.49, 95% CI: 0.24-0.98, p=0.04 respectively). Childhood whooping cough was associated with a higher risk of (adjusted HR, aHR=4.88, 95% CI: 2.29-10.39, p<0.0001). The association between whooping cough and cancer-related mortality was significantly different between men and women (p=0.05), with a stronger association among women than men (women: aHR =12.20, 95% CI: 3.01-49.42, p=0.0005; men: aHR=2.10, 95% CI: 0.80-5.50, p=0.13).

These results, in a pre-vaccination cohort, suggest that there may be some disease-specific associations between childhood infectious diseases and death from adult cancer, however further studies are required to confirm the specific associations identified.

## **Retention strategies of participants in the Quebec Longitudinal Study of Child Development**

*Bertrand Perron, Nancy Illick, Institute of Statistics Quebec, Canada*

Retention of the participants in a longitudinal survey depends on effective strategies for motivation and commitment of individuals. Choices for the implementation of these strategies are usually dictated by many factors, such as duration and frequency of data collection, the budget available and characteristics of the studied population.

The Québec Longitudinal Study of Child Development (QLSCD) was designed to advance our knowledge of child development. Since 1998, a cohort of 2,120 Québec infants and their parents are followed annually or every two years. The young participants are now fourteen years old.

Since the beginning of the study, a wide range of strategies has been integrated to motivate parents and children to pursue their participation in the study. Now that the children enter adolescence, a new challenge appears in order to assure good response rates and preserve data quality.

We will present the sample attrition as it evolved since 1998 and put it into perspective with the implementation of different retention strategies. We will also show the results of a survey addressed to the participants in 2012, regarding their interest in the study. Finally, we will discuss ways to adapt the retention strategies to the age of the studied population.

## **Evidence of selection bias in the pilot for the longitudinal study 'Ageing in Spain' (ELES) asks for a revision of sampling procedures**

*Angel Rodriguez-Laso, Elena Urdaneta, INGEMA, Spain*

A study with 1,747 interviews across Spain has been carried out as a pilot for the ELES (Longitudinal Study 'Ageing in Spain'). Among others, its aim was to test the sample design strategy. Because ELES was conceived initially as nationally representative of the population over 50 years, the pilot's sampling framework was a directory of households' telephone numbers in electoral rolls all over Spain. Households and one individual per household were selected at random within electoral rolls until the sample got the Spanish population sex and age structure. A telephone interview was carried out, then a nurse visited the household and finally a CAPI took place. 14.7% of the eligible households agreed to participate. Non-response analyses show that households in electoral rolls of lower socioeconomic level and belonging to specific regions and younger individuals were less likely

to participate in the telephone interview and the CAPI, respectively. ELES' sample was healthier than the corresponding Spanish population. The presence of these selection biases makes us reconsider the possibility of sampling in pre-specified locations where the logistics of information retrieval (including blood sample extraction) would be easier, instead of going for a national sample that would not be really representative.

### **The influence of attitudes towards school and classmates on achievement scores**

*Piotr Rycielski, Anna Hawrot, Radoslaw Kaczan, Educational Research Institute, Poland*

The paper presents research results of the longitudinal study that is being conducted at Institute for Educational Research, School Effectiveness Research Unit. The research focus of the study is to identify key determinants of the effectiveness of school education. The study focus on student attainment and their biological, psychological, social and educational determinants. The study started in autumn 2010 and includes the cohort of students who began the third grade of primary schools that year (N=5000). Previous research shows some relationship between student's attitudes towards school and classmates and their school performance (Tyson, 2002; Haladyna, 1979). In the reported study we used a measure of student's attitudes towards school and classmates. The dependent variables were achievement scores on language and mathematical skills. The results show important relationships between these variables. The influence of attitudes toward school and classmates is related to the patterns of learning, and influences the achievement scores. These effects are moderated by socioeconomical status of the family.

### **Impact of acrylamide intake on fetal growth - results from the Norwegian Mother and Child cohort study (MoBa)**

*Talita Salles, CREAL, Spain*

Background: Since acrylamide has been found to be widespread in food and to cross the human placenta, concerns have been raised about potential developmental effects.

Objectives: To assess associations between small for gestational age (SGA) and birthweight with prenatal exposure to dietary acrylamide.

Methods: This study included 50651 women in the Norwegian Mother and Child Cohort Study (MoBa). Maternal acrylamide intake during pregnancy was assessed based on estimates obtained from a food frequency questionnaire (FFQ) which was validated against hemoglobin (Hb) adducts in a subset of samples (n=79). Multivariable regression models were used to assess associations between prenatal *acrylamide exposure and size at birth*.

Results: Acrylamide intake during pregnancy was associated with significant reductions in size at birth. Comparing women in the highest vs. lowest quartiles of acrylamide intake, the multivariable-adjusted odds ratio (OR) for SGA was 1.11 (95%CI, 1.02; 1.21) and the adjusted coefficient±SE for birthweight was -25.7±5.2g. Results were similar after excluding smokers. There were significant correlations between maternal glycidamide-Hb adduct levels (an acrylamide metabolite) versus estimated acrylamide intake (Spearman correlation 0.48).

Conclusions: The results suggest prenatal exposure to dietary acrylamide may impair fetal growth. Reducing dietary acrylamide exposure among pregnant women might be beneficial for fetal growth.

### **Health deterioration in a single generation of African-American and white US females: within a race and across race comparisons**

*Pamela Salsberry, Patricia B. Reagan, Ohio State University, USA*

Background: There is growing concern in the US that there is a decline in health in birth cohorts from the later part of twentieth century; this trend may be affecting minorities and those of lower income at a greater rate.

Aims: 1) To compare the health of young women with that of her mother. 2) To ascertain the extent of health disparities in mothers and compare these with health differences in daughters. 3) To determine if early childhood poverty alters health measured as a young adult.

Research methods: Using the US based National Longitudinal Survey of Youth, 1979 we examined health indicators in mothers and daughters at similar ages. Comparisons within race, stratified by early poverty exposure were completed; comparisons within generation and across race were done to examine racial disparities.

Findings: The BMI's of daughters were 3 points greater and their age of menarche 6 months earlier than their mothers. Poverty was associated with worse health outcomes in whites, but not in African-Americans. There were significant African-American/white health differences in both generations; the gap was wider in the daughters.

Conclusion: These findings suggest a health decline in both African-American and white daughters; the decline is more rapid in African-Americans.

### **Smacking children in the UK - are there links to socio-economic difficulties in early childhood?**

*Anja Scheiwe, Yvonne Kelly, Richard Watts, University College London, UK*

Background: The use of physical punishment by parents is legal in certain countries including the UK, despite many professional organisations calling for a complete ban. For young children, the most common form of physical punishment is "smacking". Up-to-date evidence from the UK on prevalence and associated factors of smacking is however lacking.

Aim: To determine the prevalence of smacking and assess associations between mothers' reported use of smacking and children's behavioural development.

Design: Secondary analysis of data from the UK Millennium Cohort Study.

Outcome: Teacher-reported behavioural difficulties at age 7.

Methods: Data were analysed for 6,390 children with complete information at ages 3, 5 and 7. Associations between prior experience of smacking and teacher-reported problem behaviour were tested via multiple logistic regression.

Results: At age 7, about three quarters of the sampled children had reportedly been smacked by their mother in the past. Children who had been smacked more than "rarely" at ages 3 and 5 were up to two times more likely to be identified by their class teacher as having behavioural difficulties at age 7, after controlling for problem behaviour at age 3 and family socio-economic background. Measurement issues and the possibility of reverse causation will be discussed.

### **Quantitative research to investigate psychological wellbeing and cognitive outcomes of ethnic minority children in the Millennium Cohort Study**

*Rukmen Sehmi, Institute of Education, UK*

The objective of the proposed quantitative research is to investigate psychological wellbeing and cognitive outcomes of ethnic minority children in the Millennium Cohort Study. In particular, the complex relationship between acculturation processes, contextual background and wellbeing of children with two or more influencing cultures will be explored. The research proposes to adopt acculturation theories as an integrative framework for gaining a better understanding of heterogeneity found within and between groups. The Millennium Cohort Study is a prospective, longitudinal study of UK born children in 2000/1. Oversampling of ethnic minority children enables

the operationalisation of the main predictor and outcome variables, acculturation and wellbeing, for sufficiently large samples. Contextual background variables include family based factors such as maternal psychological distress, parental education and employment levels, and community based factors such as ethnic density and regional characteristics. Currently, research investigating acculturation and wellbeing outcomes (especially positive) within ethnic minorities is limited, and there is little evidence regarding heterogeneity between groups. A more profound understanding of these variations may lead to the development of research and policies that not only target at risk ethnic groups, but also capitalises on those that are successful, despite being more at risk for poor wellbeing outcomes.

### **Young adults' romantic relationships in the context of early parent-child relations, personality development and life course transitions**

*Annekatriin Steinhoff, Matthias Grundmann, University of Muenster, Germany*

The paper investigates the complex links between young adults' romantic relationship experiences and their early parent-child relations, personality development from childhood to adulthood as well as family-related life course transitions. The study is based on a longitudinal set of quantitative data tracing Icelandic individuals' developments between the ages of 7 and 38 (nine waves). A multiple correspondence analysis of information the respondents provided on their previous romantic relationship experiences at the age of 22 reveals varying patterns of self-realizations within the limits of solidarity and distance. We find that these patterns are reflected in particular arrangements of life course transitions, e.g. to parenthood and marriage, which we discuss in due consideration of social structural contexts. In a second step, the analysis shows a systematic link between romantic relationship experiences and the respondents' early parent-child relations, which we assess considering both, parents' reports in 1976 and the respondents' own retrospective, reported at age 22. Furthermore, we find close links between the patterns observed and particular personality traits, such as ego-development and locus of control. Subsequent to the disclosure of romantic relationship experiences' multifaceted correspondents, we finally scrutinize their regularities by taking a close look at the circumstances of atypical relationship arrangements.

### **Developing the ELSA Life History Interview**

*Natasha Wood, NatCen, UK*

The English Longitudinal Study of Ageing (ELSA) is a representative panel study of older people aged 50+ in England collecting data on their health, economic and social circumstances. In 2007 a Life History Interview was carried out to collect key information about ELSA sample members from childhood to the present date. Prior to the Life History Interview most information collected for ELSA related to the current circumstances of respondents, but we wanted to enhance our understanding of how early life events can impact on later life through adding a life course dimension.

Collecting accurate information retrospectively across the life course is a challenge, but the Life History Interview used an innovative method to aid recall: the Event History Calendar (EHC) approach, which has been found to produce better-quality retrospective reports (Belli et al 2001). Previous EHCs had been carried out on paper, but due to the large size of the ELSA sample the EHC design needed to be converted to Computer Assisted Personal Interviewing (CAPI). This poster will outline the rationale for using an EHC approach, the design and development of the CAPI EHC and discuss a current project to enhance the usability of the archived Life History data.

## **Early Life circumstances and quality of life at older ages: results from the English Longitudinal Study of Ageing**

*Paola Zaninotto, University College London, UK*

**Aim:** To explore the influence of early-life circumstances on changes in quality of life in later life.

**Methods:** Data come from waves 3 to 5 of the English Longitudinal Study of Ageing, a panel study of non-institutionalised individuals aged 50 and over. The main outcome is quality of life measured using the CASP-19 questionnaire. Early life circumstances information was collected by the life history interview at wave 3. From this data the following variables were derived and used as predictors of changes in quality of life: bad relationships with parents; poor housing conditions; number of books owned; fair or poor self-reported health during childhood; experienced a major life event; best early life circumstances (none of the previous).

**Results:** The average quality of life score for someone with the best early life circumstances was 45 at wave 3, which declined to 44.8 at wave 4 and to 44.6 at wave 5, adjusted for age and sex. All early life circumstances variables were significantly related to the baseline quality of life score, but they were not significantly related to the rate of change (with the exception of books <10, which contributed to a 0.24 decline of quality of life per each wave of the study). Mean Quality of life was below 40 for those respondents who had parents that were often arguing and for those whose mother or father were cold to them or made them feel unwanted. Surprisingly, those who experienced a major life event did not have significantly lower quality of life than those who reported a good health in childhood. Lowest quality of life levels were found among those who reported fair or poor health in childhood.

**Conclusions:** Early life circumstances had an impact on the quality of life of older individuals at wave 3, but not on the rate of change. Further research is needed in to explain why, which will need to account other factors influencing quality of life, such as health, psychosocial factors and wealth.

## **The CONSTANCES cohort: a French open infrastructure for life course studies**

*Marie Zins, INSERM, France*

The CONSTANCES cohort is intended to provide public health information and to serve as an epidemiologic infrastructure open to the research community.

CONSTANCES is designed as a randomly selected sample of 200,000 French adults aged 18-69 years at inception. At inclusion, the selected subjects are invited to fill a questionnaire and to attend a Health Screening Center (HSC) for a comprehensive health examination; for those aged 45 years and older, a work-up of physical and cognitive capacities is performed. A biobank will be set up. The follow-up includes a yearly self-administered questionnaire, and a periodic visit to a HSC. Social and work-related events and health data are extracted from the national retirement, health and death databases. The data include social and demographic characteristics, socioeconomic status, life events, behaviors, and occupational factors; health data cover a wide spectrum: self-reported health scales, reported prevalent and incident diseases, long-term chronic diseases and hospitalizations, sick-leaves, disabilities, healthcare utilization and services provided, and causes of death.

To take into account non-participation at inclusion and attrition throughout the longitudinal follow-up, a cohort of non-participants will be set up and followed through the same national databases as participants. After field-pilots, the first inclusions began in January 2012.

**Symposium****The diet as a whole: methods from the Avon Longitudinal Study of Parents and Children (ALSPAC)****Convenor: Kate Northstone****Methods in infants and toddlers***Louise Jones, University of Bristol, UK*

Evidence suggests that the complementary feeding period is a vital stage for the development of food preferences and habits which may track through to later life. Therefore it is of interest to characterize diet quality during this period. Two different methods to examine the whole of diet have been developed using the dietary data available in ALSPAC collected during infancy and early childhood. The variety index for toddlers (VIT) assesses dietary variety by comparing reported intake with the recommended number of servings for each food group in the food guide pyramid. The Complementary feeding utility index (CFUI) assesses the degree of adherence to complementary feeding guidelines based on current recommendations and comprises 14 components. Derivation of both scores will be discussed. Preliminary results show that the quality of diet in the complementary feeding period is positively related to the VIT score at age 2, 3 & 4 years. The CFUI index score is associated with socio-demographic factors and dietary pattern scores at age 3 years. These methods have given a useful insight into early diet as a whole.

**Principal components and cluster analysis throughout childhood***Kate Northstone, University of Bristol, UK*

Principal Components Analysis (PCA) and Cluster Analysis (CA) are two popular methods of identifying dietary patterns in populations. PCA uses the inter-correlations that exist between large numbers of food group variables and reduces these variables into a smaller set of more manageable variables which each represent the underlying dietary patterns in the data. Using this method, each individual obtains a continuous score for each pattern that is identified and these can then be used in subsequent analyses. On the other hand, CA categorises individuals into mutually exclusive groups based on the similarities between their dietary intakes. This results in one categorical variable to be used in subsequent analyses. We have applied both of these methods to FFQ and diet diary data in ALSPAC from 2 to 13 years of age. This talk will present the two methods, identifying some of the important methodological issues and highlighting the advantages and disadvantages of each method for longitudinal analyses.

**Tracing an obesogenic dietary pattern in childhood and adolescence***Gina Ambrosini, University of Bristol, UK*

Little is known about how dietary intake tracks during childhood and into adulthood. Identifying aspects of the diet susceptible to change and the influences on dietary tracking, may assist in identifying targets for nutrition interventions. This presentation will discuss recent work in ALSPAC identifying and tracking an obesogenic 'energy dense, high fat, low fibre' dietary pattern and its key food components between 7 and 15 years of age. The dietary pattern was derived using reduced rank regression (RRR), a novel empirical method that incorporates a priori knowledge to identify specific hypothesis driven dietary patterns. The advantages and challenges associated with the RRR method will also be discussed.

### **Determinants of teacher ratings of children's ability at age 7**

*Kirstine Hansen, Elizabeth Jones, Institute of Education, UK*

There is an established literature that suggests teacher perceptions of children affect how they interact with them, how and what they teach them and how they rate their ability and behaviour. These perceptions are often based on ascriptive characteristics such as gender, ethnicity and socio-economic background independent of a child's ability. This paper examines teacher perceptions of a particular ascriptive characteristic of the children they teach – their attractiveness and asks whether these perceptions are related to how teachers rate a child's ability and behaviour. Using data from the NCDS results show that, not only do teachers rate the academic ability of attractive students more highly than less attractive students both in terms of their performance across different areas of learning (general knowledge, numbers, books and oral ability) and whether they show any outstanding potential, but they are also more likely to over rate and less likely to under rate their ability than other students. This is true even after controlling for a wide range of other factors related to the child, their family, their teacher and their school that could influence the relationship, many of which are found to be independently related to teacher's ratings.

### **Evaluating the impact of early years educational reform in Wales using the UK Millennium Cohort Study**

*Chris Taylor, Sally Power, Cardiff University, UK*

Early years education has received considerable attention in recent years, particularly as a result of longitudinal studies that demonstrate the importance of the first few years in a child's development and educational experience. In 2004 a new approach to early years education, the Foundation Phase (FP), was introduced in Wales in a number of pilot school settings. This has incrementally been rolled out to all schools and 3-7 year olds in Wales. This is a major flagship policy of the recently devolved Welsh Government, and marks a radical departure from the more assessment-driven competency-based approaches to early childhood education that existed prior to the FP.

Using approximately 1,600 children in Wales who are part of the UK Millennium Cohort Study (MCS) all born in 2000/01 we are able to examine in detail the potential impact of the FP. By comparing children who received the Pilot FP with children of the same age who received the established early years curriculum and approach (Key Stage 1) we can begin to explore the potential impact of the FP on a range of key cognitive and well-being outcomes measures derived from the MCS and how other factors might mediate any impact of the FP.

### **The links between participation in out-of-school activities and academic performance among children from diverse socio-economic backgrounds in Great Britain**

*Gitit Kadar-Sitat, Edinburgh University, UK*

The relationships between socio-economic indicators and children's academic performances have been documented by numerous studies. Yet, in Great Britain, the contribution of the out-of-school activities in which children from diverse class backgrounds are engaged to their academic abilities is largely unexplored.

To address this, the paper explores the impact of attendance in two categories of out-of-school activities: 1) Social-group activities and 2) Cultural-leisure activities, on the verbal and non-verbal performance of 7 year olds. Using OLS and Logistic regression to analyze longitudinal data from two sweeps of the Millennium Cohort Study (MCS) the study finds that children who are more socio-economically privileged are more likely to participate in the above activities and for longer. Also, the study demonstrates that participation in most of the examined activities has a positive impact on the children's test scores. This effect is significant when key socio-economic variables are controlled for. Finally, the study shows that the effect of proximal participation on children's performances is



stronger compared to the effect of participation in the past, although over all there is a cumulative effect of continuous participation.

The paper uses a socio-cultural perspective to discuss these results and draws on the concepts of social and cultural capital, as conceptualized in Coleman's (1988, 1990) and Bourdieu's (1986) works.

**Symposium    Methodological approaches to analysing longitudinal studies    Convenor: Jenny Head**

**Childhood conditions, education and main job**

*Omar Paccagnella, University of Padua, Italy*

This paper aims at evaluating and comparing across many European countries the influence of early-life circumstances on the main job of the working career. Using life history data from the SHARELIFE survey, country-specific structural relationships among childhood socio-economic status, educational attainments and main job characteristics (e.g. incomes at the beginning and the end of the spell, duration of the spell, etc.) are investigated through the estimation of recursive models, controlling for several individual covariates. Poorer socio-economic conditions during childhood are associated with higher differentials in years of full-time education and higher income inequalities. Preliminary results confirm a strong direct effect of early-life circumstances on educational attainment in all countries and an indirect effect on the main job characteristics. The extent of these results however varies across countries. Findings suggest that education policies may play a role in explaining the observed differences across countries. The introduction of support systems fostering access to education of students from disadvantaged households can weaken their financial dependence from parents and loosen the persistence in socio-economic conditions across generations.

**Strategies for dealing with missing data in longitudinal studies: the case of a binary outcome**

*Paola Zaninotto, University College London, UK*

This study evaluates the performance of four methods for handling missing data: Full Information Maximum Likelihood (FIML), Multivariate Normal Imputation (MVNI), Imputation by Chained Equation (ICE) and the two-fold Fully Conditional Specification (FCS). To reflect reality, the first three waves (2002-03 to 2006-07) of the English Longitudinal Study of Ageing form the motivating example for generating the simulated data sets. Using a random intercept model, I explore the relationship between Coronary Heart Disease (CHD) and depression and to seek for possible gender differences. The data consists of one incomplete binary outcome (depression) three complete covariates (age, gender, CHD) and three incomplete covariates (marital status, wealth, depression, physical activity, smoking status and alcohol consumption). The sample size is 4,496 in wave1; 3,465 in wave2 and 3,031 in wave3. Only 1,998 participants have complete data on all variables at the 3 waves. A simulation study is set up based on 1,998 individuals, the reference population for a complete data analysis. Simulations were done using 1000 replications. In every replication, ~55.6% of data is deleted from the complete dataset in order to reproduce the same probabilities of missingness as in the original study. For each replication 5 data sets are imputed using MVNI, ICE and two-fold FCS and estimates are combined using Rubin's rule. Results show that FIML does not perform well in terms of both accuracy and precision. MVNI also does not perform well in terms of precision, but performs better than FIML in terms of accuracy. ICE and two-fold FCS perform exceptionally well compared to both FIML and MVNI. However, two-fold FCS performs slightly better than ICE.

## **Socio-economic position predicts long-term depression trajectory: a 13 year follow-up of the French GAZEL cohort study**

*Nadia Younés, Maria Melchior et al, INSERM, France*

Low socioeconomic position may influence rates of depression, but it is not clear whether this reflects higher incidence or longer persistence of disorder. We tested the hypothesis that socioeconomic position predicts depression trajectory over 13 years of follow-up in a community sample. 12,650 individuals were assessed for depression (CES-D: 1996, 1999, 2002, 2005, 2008). These five assessments served to estimate depression trajectories (no depression, decreasing depression, intermediate/increasing depression, persistent depression). Covariates included year of birth, marital status, tobacco smoking, alcohol consumption, body mass index, negative life events, preexisting psychological and somatic health problems. Data were analyzed using multinomial regression, separating men and women. Compared to participants with high occupational grade, those with intermediate or low grade were more likely to have an unfavourable depression trajectory and experience persistent depression (age adjusted ORs: respectively 1.40, 95% CI 1.16-1.70 and 2.65, 95% CI 2.04-3.45 in men, 2.48, 95% CI 1.36-4.54 and 4.53, 95% CI 2.38-8.63 in women). In multivariate models the socioeconomic gradient in long-term depression decreased by 21% in men and 59% in women. Depression trajectories follow a socioeconomic gradient. Efforts aiming to reduce the burden of depression should address not only the needs of high risk groups but of the whole population.

## **Joint modelling methods for longitudinal studies with potentially informative drop-out**

*Jenny Head, University College London, UK*

This paper compares two methods to allow for potentially informative drop-out in analysis of longitudinal data. A major aim of longitudinal studies in ageing research is to identify risk factors that predict health decline. Potentially informative drop-out may be a particular problem in ageing research as attrition may be related to unobserved current health status. Data were from the Whitehall II study of 10,308 civil servants, with seven repeated measures of physical functioning (SF-36 physical component score) spanning approximately 15 years of follow-up. First, a growth curve model (linear mixed model) was used to investigate the influence of socioeconomic position (employment grade) on age-related trajectories of health decline. This analysis indicated that, compared to people in high employment grades, people in low employment grades experienced a greater age-related decline in physical functioning. Then, two joint modelling approaches to dealing with informative drop-out were applied, namely selection models and shared parameter models. Results from these two approaches are compared with each other and with results from the separate linear mixed model.

## **Effect of living alone on cognitive function in older ages: causal inference, longitudinal outcomes and non-ignorable dropout**

*Xavier De Luna, Maria Josefsson, Lars Nyberg, Umeå University, Sweden*

Longitudinal studies of cognition typically experience dropout and thus some individuals will not be measured throughout the follow-up period. When studying cognition change in older cohorts this dropout is not rare and often due to death or dementia. Such attrition will typically be related to the outcome itself where those having a sharper decline in cognition will tend to dropout earlier. Attrition is then called non-ignorable and must be taken into account in order to avoid misleading results. We present methods for estimating the average causal effect of a treatment, at baseline, on the trajectories of a longitudinal outcome under the presence of non-ignorable dropout. This allows us to study the effect of living alone at baseline on memory performance based on data from a longitudinal study on cognition.

## **The role of lifestyle behaviours on 20 years cognitive decline in a prospective birth cohort study**

*Dorina Cadar, Hynek Pikhart et al, University College London, UK*

Cognitive decline represents a major public health impact on individuals and governments around the world. The objective of this prospective cohort study was to examine the association between lifestyle behaviours (smoking, physical activity and dietary choice) at 36 and 43 years, independently and in combination, and decline in verbal memory and visual search speed between 43 and 60-64 years. Participants were 1018 participants from UK MRC National Survey of Health and Development (NSHD) monitored over entire life-course since their birth in one week of March in 1946. Linear regression models were adjusted first for gender, then additionally for social class of origin, childhood cognition, educational attainment, adult social class and depression. Finally the lifestyle behaviours were additionally mutually adjusted. Our results showed that consistent healthy dietary choice and physical activity across early midlife were associated, respectively, with slower memory and visual search speed decline over 20 years. Heavy smoking at 43 years was associated with faster memory and visual search speed decline. In conclusion, our results showed that adopting positive health behaviours from early midlife are promising avenues in reducing the risk of cognitive decline and dementia.

## **Education is associated with higher later-life IQ scores, but not with faster cognitive processing speed**

*Geoff Der, Stuart Ritchie et al, MRC Social & Public Health Sciences Unit, UK*

Recent reports suggest a causal relationship between education and IQ, which has implications for cognitive development and ageing - education may improve cognitive reserve. In two longitudinal cohorts, we tested the association between education and lifetime cognitive change. We then tested whether education is linked to improved scores on processing speed variables such as Reaction Time, which are associated with both IQ and longevity. Controlling for childhood IQ score, we found that education was positively associated with IQ at ages 79 (Sample 1) and 70 (Sample 2), and more strongly for participants with lower initial IQ scores. Education, however, showed no significant association with processing speed, measured at ages 83 and 70. Increased education may enhance important later-life cognitive capacities, but does not appear to improve more fundamental aspects of cognitive processing.

## **Technological approaches in the National Children's Study: challenges and lessons learned**

*Susan Schechter-Bortner, Ned English, Angela DeBello et al, National Opinion Research Centre (NORC), USA*

The National Children's Study (NCS) is a longitudinal study of unprecedented scope in the U.S., based on enrolling women of child-bearing age. As originally designed, the NCS will recruit 100,000 children to be followed until age 21 in order to understand environmental impacts on child development. In so doing we will also collect bio-specimens and environmental samples to enrich the adult and child-level data set. The NCS has presented particular challenges during the pilot phase (2009-'12) as a result of its size, scale, and ambitious nature. Our paper details the methodology of the National Children's study, as well as the results of the extended pilot phase. In so doing we detail the three recruitment methods utilized during data collection: in-person; multi-mode; provider-based. We also describe how we enrich resulting household data through the collection of biological and environmental data, as well as the linking to extant data sources (pollution from the Environmental Protection Agency, US Census data, etc.). Our paper contributes to the literature on panel surveys by detailing key challenges and lessons learned during a survey as complex as the National Children's Study, as well as approaches to enrich information collected from recruited households via extant data linkage.

## **Can the effectiveness of between-wave mailings on longitudinal surveys be improved? Results from a randomised experiment on the UK Millennium Cohort Study**

*Lisa Calderwood, Institute of Education, UK*

One of the most commonly used tracking procedures on longitudinal surveys is a between-wave mailing to keep in touch with sample members. Previous research has shown that sample members who respond to these mailings are more likely to take part at subsequent waves (Laurie et al, 1999) and that fewer fieldwork resources are required to achieve an interview with them (Couper and Ofstedal, 2009). There has also been some recent experimental research aimed at improving the effectiveness of these between-wave mailings on household panel surveys in the UK and US (Fumagalli, Laurie and Lynn, 2010; McGonagle, Couper and Schoeni, 2011).

This paper reports the results from a randomised experiment to improve the effectiveness of the between-wave mailing on the Millennium Cohort Study, a large-scale birth cohort study in the UK. Our main finding, that the content of the covering letter has a minimal impact on the effectiveness of these mailings, will help guide further research in this area and help to inform practice on longitudinal surveys. The results also make an important contribution to the existing evidence on the content of advance letters more generally and thereby have broader applicability for survey research and practice.

## **Statistical guidance on optimal strategies to prevent non-response in longitudinal studies**

*Ian Plewis, University of Manchester, UK*

The organisational complexities of managing large-scale longitudinal studies such as the UK birth cohort studies require decisions to be made at the various stages of data collection. A number of these decisions relate to sample maintenance and to the need for the study to remain representative of its target population over time so that inferences about change are soundly based. Intelligent strategies do, however, need to be based on the efficient use of limited resources which take account of the emerging consensus that a higher response rate does not necessarily imply that the achieved sample generates unbiased estimates of change parameters. The paper will show how to exploit the information contained in logistic regression models that generate estimates of response propensities, and the associated representativeness indicator and receiver operating characteristic curve to (a) examine the utility of reissuing to the field at wave  $t$  cases that did not respond at wave  $t-1$ , (b) determine an optimum threshold for allocating extra resources to respondents who might otherwise refuse. The ideas will be illustrated with data from waves one to four of the UK Millennium Cohort Study.

## **Paternal attitudes and behaviour. Results of the project 'Family Development in the Course of Life' (FIL)**

*Harald Werneck, University of Vienna, Austria*

This paper is based on data of the large scale longitudinal research project "Family Development in the Course of Life (FIL)", which started in Vienna, in 1990. Since then 175 Austrian families were investigated seven times: at 6th month of pregnancy, when the child was 3 months, 3 years, 8 years, 11, 15, and 18 years of age ( $t_1-t_7$ ). A lot of instruments were used, e.g. the Parental Role Questionnaire, the Questionnaire of the Quality of Partnership, questionnaires concerning parental division of labour and childrearing, scales investigating pleasure in activities undertaken with the child as well as strain caused by the child, socioeconomic variables, and so on.

Indicators of paternal attitudes, paternal behaviour and their impact on child development are analyzed. From the beginning, the first sweeps allowed the division of fathers into three groups corresponding to their paternal attitudes and level of involvement with the child. Later results show that the paternal attitude can vary as the children grow, and that it can influence the quality of the

parental relationship as well as the child's development. The results of this study prove the importance of taking fathers into account in order to have a better understanding of family dynamics.

### **The role of sex typed occupational and life aspirations in the psychological adjustment and resilience of UK primary school children**

*Eirini Flouri, Vanessa Moulton, Institute of Education, UK*

Using data from the Millennium Cohort Study (MCS) we investigated how the sex typicality of the occupational and life aspirations of 7-year-olds in 2008 is associated with their concurrent emotional/behavioural adjustment, and how it may moderate the association between family poverty and their emotional/behavioural adjustment. In 2008 the MCS children were asked (n=13,244) what they would like to be when they grow up. Most aspirations were occupational, and we coded their masculinity/femininity using the percentage of UK working-age women in 2008 in these occupations as follows: <25%: masculine; 25-49.9%: integrated; 50-74.9%: feminine, and >=75%: ultra-feminine. For non-occupational aspirations (e.g., superman), we allocated masculinity/femininity, where possible. Few children stated multiple aspirations, and in these cases we used the first aspiration given. There were sex differences. Of the girls' valid responses, 6.7% reflected masculine, 40.8% integrated, 30.5% feminine, and 22% ultra-feminine states. The boys' percentages were 70.3%, 22.2%, 4.8%, and 2.7%, respectively.

After adjusting for family poverty, maternal qualifications and depressed mood, and child's sex, age, ethnicity and earlier emotional/behavioural difficulties, the masculinity/femininity of the aspiration was not associated with total difficulties, emotional problems, hyperactivity or prosocial behaviour. However, masculine aspirations were associated positively with conduct, and negatively with peer problems. As regards interaction effects, masculine aspirations exacerbated the effect of poverty on conduct problems, and ultra-feminine aspirations buffered the effect of poverty on peer problems. Subsequent analyses showed that the interaction effect on conduct problems was limited to boys, and that on peer problems to girls. Furthermore, although the association between masculine aspirations and peer problems was significant in both boys and girls, it was positive in girls, and negative in boys.

### **Symposium                      Getting to grips with health behaviours from childhood to young adulthood**

**Convenor: Cara Booker**

#### **Sleep and obesity in early childhood**

*Cara Booker, University of Essex, UK*

Sleep is important for the maintenance of health and optimal functioning, and it is estimated that 5 to 7 year old children need 10-11 hours per 24 hour period. Cross sectional associations between the amount of sleep children get and the risk of obesity are apparent, but it is less clear whether longitudinal relationships exist. We examine data from the Millennium Cohort Study on 9828 7 year old children to see whether markers of bedtimes at age 5 were associated with markers of adiposity at age 7. After statistical adjustment for a range of background factors including markers of socioeconomic position, obesogenic, family and home environmental influences, we found that late bedtimes (after 9pm) and not having a regular bedtime were linked to an increased risk of adiposity: in girls; obesity (Ors=1.5 and 1.8 ); high percent body fat (Ors=2.9 and 2.5); high waist circumference (Ors=2.8 and 2.4); and in boys ; obesity (Ors= 2.2 and 2.1); high percent body fat (Ors=2.4 and 2.5); but not to the risk of high waist circumference (Ors=1.2 and 1.5). These findings have potential implications for longer term health. Potential underlying pathways of observed associations will be discussed.

### **Do unhappy adolescents become less healthy adolescents**

*Yvonne Kelly, University of Essex, UK*

Cross-sectional analysis has shown that adolescents who participate in risky health-related behaviours are also unhappy, while those who exercised more and ate healthier were also happier. Over 2000 British youth aged 10-15 who participated in the first two waves of the Understanding Society survey were examined to see whether happiness at wave 1 predicted to smoking and drinking initiation and physical activity participation at wave 2 or conversely if participation in risky health-related behaviours at wave 1 predicted lower happiness at wave 2. We found that 9% of youth transitions from non-smokers to smokers from wave 1 to 2. Fifteen percent of non-drinking youth at wave 1 reported having ever drunk alcohol at wave 2. There was also a reduction physical activity between waves 1 and 2. Among youth aged 10-12, youth who did not smoke at wave 1 were significantly more likely to have high levels of happiness at wave 2. Among this same group youth who reported drinking once per week or more were significantly less likely to have high levels of happiness at wave 2. The findings have implications for future interventions and health and happiness in adulthood.

### **Grip strength in young adults in the UK**

*Stephanie McFall, University of Essex, UK*

The purpose is to assess grip strength (GS) by gender, age, and a measure of physical activity, frequency of walking at least 30 minutes among persons aged 16 to 25. The data are newly collected as part of Understanding Society, the UK Household Longitudinal Study. Grip strength and anthropometric measurements were collected by nurses in respondent's home. This study is conducted on more than 800 or so persons aged 16 to 25 from Wave 2, Year 1 of the study.

Men, but not women, have an upward trend in GS; this trend is not present when normed per kg of body weight. The grip strength for men was 51% higher than women. When controlling for height, weight and age, physical activity was associated with grip strength for women, but for men only the contrast between walking five or more times per week and never was statistically significant.

This study presents new population health data about grip strength for this age group. GS is a quick and painless measure, acceptable across the life course. Future research should examine its association with biological markers of metabolic risk and with self-reported health behaviours.

### **Continuity, change and inequality in women's work-family lives: a multi-state sequence analysis**

*Peggy McDonough, Diana Worts et al, Dalla Lana School of Public Health, Canada*

Life course sociologists are increasingly concerned with how the general character of biographies is transformed over historical time—and with what this means for individual life chances. The individualisation thesis, which contends that contemporary biographies are less predictable and less collectively determined than were those lived before the middle of the 20<sup>th</sup> century, suggests that life courses have become more diverse across individuals. Whether these changes reflect expanding opportunities or growing risks is a matter of some debate. We examine these questions using data on five cohorts of American women who reached adulthood between the 1960s and the 1980s (N=7150) to develop employment, partnership, and parental sequences spanning the prime working and childrearing years (ages 25-49). Our subsequent analyses draw on a range of techniques, including measures of entropy and dynamic Hamming optimal matching, to evaluate these biographical sequences. We find that, on average, women's work and family biographies became more diverse over time. However, whether the growing diversity of work and family life paths reflects, on balance, broadening horizons or escalating risks depends very much on the social advantages and disadvantages women possessed as they entered their adult years.

## **Parenthood and subsequent employment: changes in mother's and father's labor participation across cohorts**

*Laura Romeu-Gordo, Julia Simonson et al, DZA, Germany*

In the literature there is plenty of evidence on the effect of childbearing on female employment biographies. We extend the analysis to men and show how parenthood affects employment biographies of men and women. Furthermore, we offer life course perspective by observing employment biographies from age 15 to 45. Finally, we follow the historical dimension by monitoring different cohorts. For our analyses we consider regional differences between East and West Germany. We analyze biographies of 10,933 individuals from the German Socio-Economic Panel (SOEP) by methods of sequence analysis and multivariate regression.

Results show that childbirth often marks a turning point in the employment of women having more episodes of part-time work or as housewife thereafter. The employment biographies of fathers remain characterized by full-time employment. Family related factors like the number of children or education/employment experience are relevant for the employment duration after first childbirth only for women. While parenthood consequences for men barely differ between East and West Germany, for women we observe significant differences by region with much longer employment interruptions of West than of East German mothers. However, in both regions there is no real convergence in employment patterns of fathers and mothers after childbirth across cohorts.

## **Parenthood and employment outcome: the effect of a first birth on men's and women's employment hours**

*Michele Haynes, Lachlan Heybroek et al, The University of Queensland, Australia*

In this paper we focus on the effect of a first birth on men's and women's employment hours in Australia. Previous research has shown that childbirth is typically associated with women's withdrawal from the paid workforce, while for men, there is either little observed change or a slight increase in work hours. Various demographic and institutional factors have been shown to affect these patterns. Australia is a particularly interesting case as it combines both a very high rate of part time employment, especially for women, with some of the longest working weeks in the OECD. Preliminary analysis shows that approximately 1307 people experience the first birth of a child over the ten waves of the Household, Income and Labour Dynamics in Australia (HILDA) panel survey. Typically, the distribution of hours worked is characterised by a large number of zero observations that arise for people who are not employed. The analysis must therefore simultaneously consider the effects of a birth on both the probability of a person leaving or entering the workforce and on a change in the number of hours worked if they are employed. We use a growth mixture model with correlated random effects to estimate the immediate and longer term effects of a birth transition on the two components of the employment process.

## **Symposium Getting a multicohort study started: design and first results of the German National Educational Panel Study (NEPS)**

**Convenor: Jutta von Maurice**

## **Learning environments: challenges and opportunities of assessment within the National Educational Panel Study**

*Thomas Bäumer, Hans-Günther Roßbach, NEPS, Germany*

The pillar "learning environments" of the German National Educational Panel Study (NEPS) is concerned with the diversity, cumulation as well as the quality of learning experiences. Within the NEPS, learning environments are conceptualized as providers of learning opportunities that have to be used by the learner to have an impact on educational biographies, decisions or competence development. This leads to certain methodological issues that can be challenging as well as inspiring:

(1) as learning opportunities essentially form person-environment-relations, objective as well as subjective assessments of learning environments have to be taken into account. (2) For learning environments in the majority of cases a multi-level approach has to be adopted. Pupils are nested into classes, classes are nested into schools, schools are nested into a regional-local context and in a broader educational and social system and so on. (3) In relation to the quality of learning environments a multi-actor perspective is usually assumed. An observer perspective can hardly be implemented into a panel design and also the two views of provider (teacher) and user (student) cannot be utilized either. Therefore, for every learning opportunity under consideration a decision has to be made as to which perspective is preferred in each case.

### **Assessment of parent-child-interaction in the birth cohort study of the National Educational Panel Study**

*Anja Sommer, Hans-Günther Roßbach, NEPS, Germany*

The birth cohort study of the German National Educational Panel (NEPS) will assess direct and indirect measurements regarding various factors relating to education in early infancy. As results by other studies have shown, there is strong evidence to suggest that early familial learning opportunities can have a long-lasting impact on child development at a later age. As one of few large-scale longitudinal studies NEPS is taking up the challenge of directly assessing the process quality of familial learning opportunities, which can be observed in parent-child-interaction. The direct observation is embedded in a personal interview carried out during a visit to the family. The interaction itself is structured by a semi-standardized play situation and is recorded on video. Videos are analyzed by trained coders using a macroanalytic coding system, which mainly focuses on the constructs of parent's sensitivity and responsiveness. After describing assessment and coding processes, which were both tested in a feasibility and pilot study, this presentation will focus on first results of these pre-studies. Finally we will discuss their consequences for the first wave of the main study (n=3,000) starting in August 2012 featuring children at the age of 7 months.

### **Inequality at the starting gate: ethnicity, social class and gender in German kindergartens**

*Tobias Linberg, Sebastian Wenz, NEPS, Germany*

Inequality in educational achievement along the big three – ethnicity, class, and gender – is a well-documented phenomenon for all developed countries. While most research focuses on achievement and attainment in school, we are interested in achievement gaps at a younger age. In particular, we examine achievement gaps in both language and science competencies along ethnicity, social class, and gender divides among five-year-old children attending German Kindergartens. We are the first to study inequality in educational achievement at this early age using nationwide scientific-use data for Germany. Our data comes from the first wave of the Kindergarten cohort of the German National Educational Panel Study (NEPS) and we start our contribution with a brief overview on how the data were collected. We proceed by looking at the performance in language and science assessments of girls and boys and children with different ethnic and socioeconomic background. We expect differences along all three dimensions and use more complex models to investigate potential explanations for these differences, such as variation in the children's home learning environments.

### **Cultural capital of the NEPS fifth-grade cohort**

*Frank Goßmann, Vanessa Hartlaub, et al, NEPS, Germany*

In the research on cultural capital in education, there are still open questions concerning the mechanisms behind its accumulation, transmission and effectiveness. To answer these questions, one of the aims of the German National Educational Panel Study (NEPS) is to provide an encompassing and comparable measurement of cultural capital over the life course. This paper will



provide a short overview of the data collected in the NEPS fifth-grade and will then move on to present results from the first wave of this cohort. It will focus on the mechanisms by which different dimensions of cultural capital are transmitted from parents to children within the family, as well as the effects of these dimensions on school performance.

## **Symposium    Determinants of child growth**

**Convenor: Kate Tilling**

### **Multilevel models for reducing the dimensionality of growth data**

*Kate Tilling, Corrie MacDonald-Wallis et al, University of Bristol, UK*

We discuss three problems of commonly-used lifecourse methods: multicollinearity of repeated growth measures, a requirement for all individuals to be measured at the same ages, and bias/inefficiency due to missing data. As a motivating example, we relate data on weight from birth to 5 years of age to systolic blood pressure at 6.5 years. We use fractional polynomial and linear spline multilevel models to model growth, and to examine the relationships between baseline covariates (e.g. sex) and patterns of growth. We use this model to derive summary measures of growth for each individual, which are included as exposures in models of blood pressure, and we compare this approach to commonly-used methods such as z-score or lifecourse plots. Finally, we fit a multivariate multilevel model to both the growth process and the outcome (blood pressure).

Multilevel models have two advantages over commonly-used methods, firstly the results are easily interpretable, and secondly, there is little evidence of colinearity between growth parameters derived from multilevel linear spline models. The multivariate multilevel model gives similar results but with wider confidence intervals. Multilevel models are a simple, easily interpretable way of summarising individual growth trajectories and relating these to both exposures and later outcomes.

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### **Individual trajectories of childhood growth in five cohorts: the application of linear spline multilevel models**

*Laura Howe, Kate Tilling et al, University of Bristol, UK*

Accurate modelling of childhood growth is important in population research. Linear-spline multilevel modelling is a valid approach for deriving individual growth trajectories. We describe the application of this methodology to five cohorts from: UK born in 1991/2 largely European origin; Belarus born late 1990s; Brazil born 2004; UK born 2007-10 mixed South Asian and European origin; Portugal born 2005/6.

Each cohort has a unique data structure. Some have growth measurements taken across all ages and can therefore be used to test alternative positions for the linear-spline knot points, whereas others have precisely defined follow-ups at which measurements are taken on all children within narrow age bands. Some cohorts have data from multiple measurement sources with varying measurement error, which must be accounted for in the models. In addition to describing the implications of the differing data structures for linear-spline multilevel modelling, we combine data from all cohorts into a single model. This allows us to test differences in growth rates between cohorts, and to examine whether this could be used to apply the methodology in smaller cohorts where convergence could be an issue. We conclude with a summary of the implications for the application of this methodology to other cohorts.

### **Are there differences in growth trajectories between white and Pakistani infants?**

*Emily Petherick, Lesley Fairley et al, Bradford Institute for Health Research, UK*

**Objectives:** To investigate ethnic differences in growth in the Born in Bradford (BiB) longitudinal study of 13,819 infants (39% White, 61% other, predominantly Pakistani) born in Bradford between 2007 and 2010.

**Methods:** The full cohort has routine growth measures at birth-28 days, 6-8 weeks, 7-9 months and 18-24 months and a subsample of 1735 infants at birth had further measures undertaken by research staff at 6, 12, 18 and 24 months. Individual growth trajectories were estimated for weight and length from birth to 2 years in the subsample of children with both routine and research measurements using linear spline mixed-effects models (two levels; measurement occasion and individual). Ethnic differences in growth trajectories were assessed.

**Results:** The best-fitting model has knot points at 4 and 9 months. White girls and boys were heavier at birth than their Pakistani peers, and by two years of age boys and girls of both ethnicities had similar weights. Early growth rates in length were greater for Pakistani children of both genders compared to their White British peers, and by two years Pakistani children were taller.

**Conclusion:** Differences in weight and length by ethnicity arise largely through differences at birth and growth in early life.

### **Maternal education inequalities in height growth trajectories in childhood: 2004 Pelotas birth cohort study**

*Alicia Matijasevich et al, Federal University of Pelotas, Brazil*

**Objectives:** To explore the age at which socioeconomic inequalities in child height emerge among children from a middle-income country.

**Methods:** Using data from the 2004 Pelotas cohort study from Brazil we modelled individual height growth trajectories in 2106 boys and 1947 girls from birth to 4y using a linear spline mixed effects model. Differences in height trajectories by maternal education were investigated.

**Results:** We showed linear and positive associations of maternal education with birth length and length/height growth rates in the first 4y of life. By age 4y the mean height of boys was 101.06cm (SE=0.28) in the lowest and 104.20cm (SE=0.15) in the highest education category. Among girls the mean height was 100.02cm (SE=0.27) and 103.03cm (SE=0.15) in the lowest and highest education categories. For both boys and girls there was on average a 3cm difference between the extreme education categories. Differences in postnatal growth rates persisted in the adjusted analyses.

**Conclusion:** Our data demonstrate an increase in the absolute and relative inequality in height after birth, inequality increases from approximately 0.2 SD of birth length to approximately 0.7 SD of height at 4y, indicating that height inequality, which was already present at birth, widened considerably through childhood.

In press in: Paediatric and Perinatal Epidemiology | DOI: 10.1111/j.1365-3016.2011.01251.x

### **Association of patterns of maternal blood pressure change across pregnancy with offspring size at birth**

*Corrie Macdonald-Wallis, Kate Tilling, Debbie Lawlor, University of Bristol, UK*

**Objective:** To identify subgroups of women with similar patterns of blood pressure (BP) change across pregnancy and to compare offspring birth size between groups.

**Methods:** We examined routine antenatal BP measurements (median 14 per woman) of 12,302 women in the Avon Longitudinal Study of Parents and Children who had a singleton live term birth. Latent class growth analysis was used to group women according to their BP trajectories across pregnancy.

**Results:** Models with three classes were chosen for systolic BP (SBP) and diastolic BP (DBP) change, characterised by a "low", "medium" or "high" BP at baseline and late pregnancy increase in BP. The

class with a high initial SBP and largest SBP increase had a lower average offspring birthweight (mean difference (95% CI): -0.04kg (-0.07, -0.01)) and greater risk of small for gestational age (SGA) offspring (odds ratio (95% CI): 1.21 (0.94, 1.56)) than the medium SBP class, as did the high DBP class compared with the medium DBP class (mean difference in birthweight: -0.12kg (-0.15, -0.08) and odds ratio for SGA 1.50 (1.15, 1.94)).

Conclusion: Our findings suggest that BP trajectories characterised by a higher initial value and greater increase across pregnancy are associated with reduced fetal growth.

### **Individual trajectories of energy intake from age 3 to 13 years and their role in mediating the association between maternal BMI and offspring BMI**

*Emma Anderson, Debbie Lawlor, University of Bristol, UK*

Background: Maternal BMI is strongly associated with offspring BMI. Offspring energy intake through childhood and adolescence may be an important mediator of this association.

Methods: Energy intakes were assessed with food frequency questionnaires and 3-day food diaries between ages 3 and 13-years for 12,032 participants in the Avon Longitudinal Study of Parents and Children. Individual trajectories of energy intake were modelled using linear-spline multilevel models with one knot point at 7 years. Individual-level residuals show how individuals deviate from the average energy intake at 3 years and average change in energy intake from 3-7 years and 7-13 years. Residuals were included in a path analysis model to assess their role in mediating the association between maternal BMI and offspring BMI at 15 years.

Results: Energy intake increased from 3-7 years and at a slower rate from 7-13 years. Path analysis revealed that energy intake from 3-13 years accounts for 14.6% (95% CI 13.9%, 17.8%) of the association between maternal BMI and offspring BMI at 15 years in females, and 17.6% (95% CI 13.3%, 21.0%) in males.

Conclusion: Offspring energy intake from 3-13 years is a partial mediator of the association between maternal BMI and offspring BMI at 15 years.

### **Round Table                      Alcohol use, social relationships and health from adolescence through midlife**

**Convenor: Jennifer Maggs**

### **Intergenerational effects on risk behaviors among British cohort study members and their adolescent children**

*Megan Patrick, Jennifer Maggs et al, University of Michigan, USA*

Objective: Parent and family factors associated with adolescent risk behaviors were examined using parent and child self-reports.

Method: Adolescents aged 12-15 (N=271) and their mothers who were in the British Cohort Study (BCS; born 1970) were both surveyed when mothers were 34 years old. Predictors included characteristics of the child (gender, age, conduct problems), family (social class, two-parent family, parent-adolescent conflict), neighborhood (graffiti), and parent (depression, substance use). Dependent variables were alcohol, cigarette, and marijuana use and delinquent behaviors.

Results: Child characteristics were predictive, with older children more likely to engage in all behaviors. Adolescent conduct problems were associated with smoking, bullying, skipping school, and suspension. Parent-child conflict predicted smoking cigarettes and marijuana, stealing, bullying, and suspension. Adolescents who lived in neighborhoods with graffiti were more likely to have stolen and less likely to have bullied another child. Adolescents whose mothers reported past-year depression at age 34 were less likely to drink regularly and to smoke. Notably, mother's current drinking (frequency, units, and CAGE 1+) predicted child drinking (ever and sometimes/regularly); the same pattern appeared for marijuana use.

Conclusions: Parents' behaviors predicted adolescent behaviors after controlling for characteristics of the child and the intergenerational family context.

### **Dating and substance use in adolescent peer networks: a replication and extension in the US Prosper Intervention Project**

*Derek Kreager, Dana L. Haynie, Suellen Hopfer, Pennsylvania State University, USA*

Objective: The current report examined associations between romantic partner, peer, and individual substance use behaviours in a sample of American adolescents.

Method: Two waves of data (8th and 9th grade) are drawn from the PROSPER intervention project and used to identify dating couples (n=744) and their network of friends in 54 sampled school-cohorts. Student participants completed questionnaires that assessed substance use, background characteristics, and dating and friend nominations. Friend, partner, and friend-of-partner substance use were assessed at each wave directly from respective reports. Hierarchical logistic regression models examined the associations between friend, partner, and friend-of-partner substance use and daters' future drinking and smoking.

Results: Consistent with a bridging hypothesis, friends-of-partner drinking had a strong and independent association with subsequent drunkenness ( $b=1.44$ ,  $p<.05$ ) and drinking ( $b=.67$ ,  $p<.05$ ) among daters, and these associations did not vary by gender. A similar association was not observed for smoking, where partner ( $b=.74$ ,  $p<.01$ ) and direct friends ( $b=1.26$ ,  $p<.01$ ) smoking showed strong and significant associations with future smoking, but friends-of-partner smoking did not ( $b=-.30$ ,  $p>.10$ ).

Conclusions: The selection and influence processes associated with romantic relationships and smoking differ substantially from the same processes for drinking. Intervention efforts aimed at reducing teenage smoking should be aimed at proximal peer and romantic relationships, whereas interventions of teenage drinking should also include the wider circle of indirect friends.

### **Substance use and delinquent developmental pathways among young men: interactions with family and work transitions in the BCS 1970**

*Ingrid Schoon et al, Institute of Education, UK*

Objective: This research examines associations between alcohol use, delinquent behaviour, and family and work transitions between ages 16 to 30 years. In particular, potential cascading effects are examined, linking adolescent alcohol use and delinquent behaviour to variations in partnership formation and employment experiences, which in turn are assumed to be associated with alcohol use and delinquent behaviour in adulthood.

Method: The study is based on data collected for the 1970 British Cohort Study, comprising about 3000 men with information regarding alcohol use and delinquent behaviour at age 16 and age 30. Regression and path models are used to assess the associations between alcohol and crime trajectories and variations in partnership formation and employment transitions, controlling for social background and previous behaviour problems.

Results & Conclusions: The findings suggest that alcohol use at age 16 is associated with delinquent behaviour at age 16 and age 30. There are furthermore significant associations between alcohol use at 16 and subsequent employment transitions and partnership formation, which in turn shape persistence in problem drinking and delinquent behaviour. The findings are discussed in terms of a life course model of human development.

### **Transitions into Adulthood Contribute to Increased Health and Well-being: U.S. National Panel Data Spanning the Third Decade of Life from the Monitoring the Future Study**

*John Schulenberg, Jeremy Staff et al, University of Michigan, USA*

Objective: Using fixed-effects regression to control for selection, we examined how work, education, and family transitions during the 20s predict changes in health/well-being.

Method: Multi-cohort panel data from the US nationally representative Monitoring the Future samples included five waves collected biennially at ages 19-20 through 27-28 from 31 cohorts (high school seniors in 1976-2006; N ≈26,000). Health and well-being (time-varying outcomes) included self esteem, self efficacy, social support, depressive affect, risk taking, health maintenance activities, and substance use. Time-varying predictors included school roles/experiences, work roles/experiences, marital status, parental status, and living arrangements. Moderators included gender, race/ethnicity, socioeconomic background, and cohort. Two-level fixed-effect hierarchical models estimated within-individual change, controlling for all time-stable individual differences, thus ruling out selection.

Results: All indices of health/well-being improved with marriage. Student status was associated with increased self esteem, self efficacy, and social support, but decreased health maintenance. Work effects were more nuanced: full-time work in professional jobs only was associated with increased well-being; any full-time employment was associated with decreased health maintenance. Some effects were moderated by gender, but not by other sociodemographics.

Conclusions: In ruling out selection effects, we found that many early adult role transitions and experiences predict improved health and well-being.

### **Drinking patterns predict alcohol problem symptoms and early mortality up to 27 years later in the national child development study**

*Jennifer Maggs, Megan Patrick et al, Pennsylvania State University, USA*

Objective: To predict alcohol problem symptoms in midlife and early adult mortality as a function of quantity of alcohol consumed in three prior decades in adulthood.

Method: Prospective survey data from the nationally representative longitudinal National Child Development Study (born 1958) predicted midlife alcohol problems and mortality. At ages 23, 33, 46 and 50, cohort members were classified as abstainers (0 drinks in prior week), light-to-moderate drinkers (1-14 drinks for women, 1-21 drinks for men), or heavy drinkers (15+ drinks/women, 22+ drinks/men, following UK health recommendations). Additional variables were problem drinking as indicated by the CAGE (age 33, 42) and AUDIT (age 50), and death prior to age 50.

Results: Drinking category predicted substantially higher likelihood of elevated (8+) AUDIT scores. For example, 6% of abstainers, 14% of light-to-moderate, and 29% of heavy drinkers at age 23 had elevated AUDIT scores at age 50 (OR=2.59 [2.38, 2.83],  $p < .001$ ). Number of CAGE symptoms predicted death by age 50. Results were replicated for both genders despite substantially more heavy drinking by men, particularly early in adulthood.

Conclusions: Drinking patterns many years prior predict alcohol symptoms and mortality. Ongoing propensity analyses will balance for selection to more rigorously test underlying mechanisms.

### **Family and work transitions and changes in drinking across adulthood: evidence from the National Child Development Study**

*Jeremy Staff, Kaylin Greene et al, Pennsylvania State University, USA*

Objective: This research examines how changes in work and family roles from ages 23 to 50 predict fluctuations in alcohol use.

Method: Longitudinal data are drawn from the National Child Development Study (NCDS), an ongoing nationally representative birth cohort study of children born in 1958 in Britain (n=17,415 infants). Alcohol use and adult role transitions were measured at ages 23, 33, 42, 46, and 50. We

examine the extent to which adult alcohol use rises and falls in tandem with changes in union formation and dissolution, parenthood, and employment. We more definitively isolate the effects of role socialisation on alcohol use by controlling for unobserved factors that may predict both adult role transitions and drinking behavior. We also consider whether the effects of social roles transitions on alcohol use vary by gender and social class origins.

Results: Alcohol use (prevalence and amount in the past week) is lower when respondents are married or cohabiting than when they are single and not cohabiting, controlling for stable unobserved effects. Alcohol use is higher when they reside with their parents, though parenthood coincides with reduced alcohol use, especially among women. Alcohol use is higher when respondents are employed compared to when they are not working.

Conclusions: Whereas most studies of alcohol use focus on predictors in young adulthood, we examine changes in alcohol use during adulthood. Distinguishing social roles that strongly predict alcohol use, in particular marriage and parenthood, may help identify adults most at risk for increased alcohol use and problems.

### **Symposium Family, work and quality of life**

**Convenor: Jessica Abell**

#### **Cohort and gender differences in work-family patterns in the UK**

*Anne McMunn, Rebecca Lacey et al, University College London, UK*

Background: Secular changes in the work and family lives of men and women are well-documented, but characterising these changes over the life course is more challenging. As a first step towards assessing the health impact of social change in women's and men's work-family life courses, participation in paid and unpaid domestic work, and family forms are characterised using longitudinal typologies from British birth cohort studies. Gender and cohort differences in these typologies are examined. Objectives and methods: Participants of three British birth cohort studies are included: the National Study of Health and Development (NSHD) born in 1946, the National Child Development Study (NCDS) born in 1958, the 1970 British Cohort Study (BCS70). Work-family typologies will be constructed using longitudinal data on employment status and hours worked, marital and partnership status (including cohabitation) and the number and ages of children (in and out of the household) from each adult data sweep.

Sequence analysis will be used to assess observed individual work-family histories in relation to their distance from pre-determined ideal-type sequences.

Results: It is hypothesized that results will show increasing individual diversity, and decreasing gender differences, in work-family life courses across cohorts.

#### **Predictors of change in quality of life in early old age**

*Loretta Platts, Elizabeth Webb, et al, Imperial College London, UK*

Quality of life is closely linked to the state of health but is also affected by social influences. It has been observed to diminish as people enter the fourth age; this could be due to the development of ill health and restrictions to daily activities as well as to an increase in the frequency of negative life events such as hospitalisation or bereavement. This study aims to see how changes in current circumstances might explain changes in quality of life in the Gazel occupational cohort of French gas and electricity industry workers. Quality of life was measured in 2005 and in 2009 by the CASP-19 instrument, which has been specifically designed for use in later life. Self-rated health was measured in 2003 and 2007 with the Short Form Health Survey (SF-36) questionnaire. Life events occurring in each year as well as the degree of social support the individual received for each life event have been recorded in self-completion questionnaires. A multivariate change analysis will examine associations of changing social and health circumstances with changes in quality of life and whether the degree of

social support provided moderates this relationship. It is hypothesized that that negative life events and worsening health will be associated with decreases in quality of life over time.

### **Older parents' relationships with their adult children: life course influences and implications for quality of life**

*Robert de Vries, David Blane, Imperial College London, UK*

**Background:** A number of life course experiences and transitions could have an effect on the quality of the relationships older people have with their adult children. For example, previous work has shown that parental divorce, ill-health, or the birth of grand-children can all have a negative effect on relationships between parents and children. Children are an integral element of social support for many older people and the quality of these relationships is therefore a potentially important predictor of their quality-of-life.

**Objectives and methods:** This study uses data from the English Longitudinal Study of Ageing (ELSA) life-history interview to investigate life course predictors of the quality of respondents' relationships with their children. Life course experiences and transitions in several domains are investigated; including health, socio-economic circumstances, and divorce, remarriage, and step-family formation. This study also investigates the effect of relationships with children on respondents' quality-of-life as measured by the CASP-19 scale.

**Results:** We predict that life course experiences in all domains will have a significant effect on older people's relationships with their children; and that the quality of these relationships will have a knock-on effect on their quality-of-life.

### **Marital status across the life course and quality of life in later years: a welfare regime comparison**

*Jessica Abell, David Blane et al, Imperial College London, UK*

**Background:** There is consistent evidence of an association between marital status and well-being, with married people generally having higher levels of well-being than their unmarried counterparts. However, some evidence suggests that marital status disruption is more detrimental to well-being than remaining unmarried. Considering changing patterns of marital status and living arrangements across the life course will be important to ascertain the benefits for well-being in later life of different marriage and living arrangements. The importance of marriage in later years has also been suggested to differ for men and women. In addition to this, cross-national variation in the strength and predictors of this association has been suggested.

**Objectives and methods:** This study aims to explore how marital status over the life course predicts quality of life in later life and whether this relationship varies by country and gender. Secondary analysis of SHARELIFE, the third wave of data collection for THE Survey of Health, Ageing and Retirement in Europe (SHARE) was undertaken. SHARE is a European, multidisciplinary panel study using and includes data from thirteen European countries which have been clustered into four welfare regimes based on the work of (Ferrera, 1996). The measure of quality of life used was CASP-12, which has been developed and validated to measure quality of life in old age.

**Results:** It is hypothesized that more stable patterns of marital status will be beneficial and that this benefit will be greater for women and also individuals living in countries with a more familiastic welfare system.

## **Comparing life course influences on quality of life: a tale of two cohorts**

*Gopal Netuveli, Imperial College London, UK*

Background: This paper aims to compare and contrast two cohorts of Europeans with respect to the early life influences on quality of life. They were children during the decades following the two great wars, the 1920s and 1950s, which in spite of the commonality of their immediate past were different: the 'roaring twenties' characterised by instability and impetuosity (*les années folles*) ending with a whimper in the great depression; and the 'golden fifties', a period of recovery and restructuring, leaving its mark to be felt even today.

Objectives and methods: Using data from waves two and three of the Survey of Health, Ageing, and Retirement in Europe, we fitted pathway models from childhood socioeconomic circumstances measured using head of household's social class at age 10 to quality of life at 50 years or older. We conceived the paths as passing through two points of mediation: a distal one, own social class at age 33, and proximal ones, current health and economic circumstances. We look at results within countries as well as within super national collections like welfare state regimes.



## Day 3 – Wednesday 31<sup>st</sup> October 2012

Keynote

Early origins of obesity

**Marie-Aline Charles, Centre for research in Epidemiology and Population Health and Ined-Inserm joint unit ELFE**

Maternal overweight and rapid infant weight growth are among the more consistent early risk markers for the development of obesity. Both childbearing age and infancy are increasingly considered as critical periods for early prevention of obesity. With that perspective, it is necessary to inform the evidence base for effective intervention. The presentation will focus on 1) the short and long term consequences for the offspring of maternal weight changes before and during pregnancy and 2) what potentially amendable factors explain rapid infant weight. Animal studies suggest that dietary manipulations influencing maternal weight before pregnancy has long term consequences on offspring growth. Confirmatory data in humans are scarce. In contrast a number of studies have shown that weight gain in pregnancy is associated with excess fat mass in the offspring. In infancy, weight gain in the first six months of life appears as the most critical for later overweight. In the French EDEN mother-child cohort study, factors associated with 3 months growth velocity were specifically investigated. Surprisingly, paternal BMI was positively associated with offspring 3-month growth velocity whereas the association with maternal prepregnancy BMI was negative. Gestational age and formula feeding were other factors promoting faster infant early growth. Implications for future research will be discussed.

**Designing data collection instruments for children and young people**

**Convenor: Lisa Calderwood**

**Developing a self-completion instrument for 11 year olds on the UK Millennium Cohort Study**

*Kate Smith, Lisa Calderwood et al, Institute of Education, UK*

The Millennium Cohort Study is following over 19,000 children born in the UK in 2000/1. So far there have been four waves of the study at ages 9 months, and 3, 5 and 7 years. The fifth wave is taking place in 2012 when the study children are aged 11 and in their final year of primary school. At the Age 11 Survey the children are completing their own self-completion questionnaire lasting around 30 minutes. This paper will describe our approach to the development of the content and design of the children's questionnaire and discuss the issues that were encountered.

Development work for the questionnaire involved a number of stages to ensure that the content was appropriate and that the instrument was designed optimally for this age group. This paper will report on our approach to content development including the scientific and questionnaire design principles which we applied when deciding which questions to include and to the design of the questionnaire in terms of layout, routing, response categories and question formats. It will also cover how the content and design developed during the course of the development work in response to findings from qualitative pre-testing, cognitive testing and field piloting.

## **Targeted use of audio support for a child self-completion survey in Sweep 5 of the UK Millennium Cohort Study (Age 11 Survey)**

*Emma Wallace, Julia Pye et al, Institute of Education, UK*

Use of audio to support implementation of self completion questionnaires has become reasonably established as a means to support participation and accuracy of completion among survey respondents with lower levels of literacy. However, limited evidence exists regarding who this approach is useful for and how it can be targeted and administered most effectively. Furthermore, a significant amount of the existing evidence focuses on Audio-CASI (Computer Assisted Personal Interviewing), yet a substantial proportion of studies with children are conducted on paper.

This paper reflects on the audio-supported paper self completion approach that has been developed for the Millennium Cohort Study (MCS) Age 11 Survey. The MCS uses data from prior sweeps on children's reading ability to target the audio support. This paper presents findings from piloting, as well as analysis of data from the fieldwork. The findings help us to understand which groups of children this approach is potentially most useful for, and how the approach can be targeted and implemented to deliver most benefit. The paper will reflect on appropriate approaches for studies where prior information on the literacy of respondents is not available for of targeting, as well as in cohort studies where this type of information is available.

## **Interviewing 13-year-olds in the Growing Up in Ireland Study**

*James Williams, Economic and Social Research Institute, Ireland*

Growing Up in Ireland has two cohorts of children and their families – a cohort of 11,000 infants who were recruited when they were 9 months of age and a cohort of 8,500 older children who were recruited as 9 years. The families and children in the younger cohort were interviewed at 9 months and 3 years. The older cohort was interviewed at 9 years and 13 years.

The presentation focuses on the interviews with the 13 year olds and their families. This involved using two laptops in the home to administer a series of inter-linked questionnaires to children and their caregivers in both CAPI and CASI modes, as well as school performance tests to the children. Using two laptops to simultaneously administer the questionnaires to children and their parents/guardians considerably reduced total contact time with families. The outline content of the information recorded in the various questionnaires (especially the sensitive instruments completed by the children) is considered, as is item non-response and quality of data completed in CASI and CAPI modes. Consideration is also given to issues of assent and consent, in particular parent/guardian consent for the children's completion of more sensitive sections of their interview.

## **Online data collection in the ALSPAC cohort**

*Ross Robinson, University of Bristol, UK*

The Avon Longitudinal Study of Parents and Children (ALSPAC), also known to its participants as Children of the 90s, recruited more than 14,000 pregnant women with estimated dates of delivery between April 1991 and December 1992 in the former Avon administrative region of the UK. These women, the children arising from the index pregnancy and the women's partners have been followed in detail until the present day.

During this period an important method of data collection has traditionally been postal self-completion questionnaires to mothers, fathers and children, as well as hands-on clinical assessments and data linkage. However, particularly due to the age of the children (around 21 years) and the associated challenges in encouraging their participation, the study is now seeking to move its

participants towards online questionnaire completion to maintain overall questionnaire response rates into early adulthood. This paper will focus on ALSPAC's early efforts to move the cohort towards online questionnaire completion, including use of the web and social media, and then explain in detail the approach and preliminary findings from for the 2012 – 2013 questionnaire sweeps.

### **The time of their lives- collecting time use data from the children of the Longitudinal Study of Australian Children,**

*Joanne Corey, Jenny Gallagher, Elisabeth Davis, Australian Bureau of Statistics*

In Wave 4, a paper diary was developed for the older cohort children (then 10-11 years). Prior to the home interview, the child was sent a 4 page paper diary, together with an explanatory letter, clock pen, and food/drink stickers to assist them in completing the diary. The child was instructed to complete the diary the day before the home visit. During the home visit, activity information was drawn from the child, using the diary, and further context information was elicited by the Interviewer. Interviewers also asked additional prompts to fill in missing information where necessary. The Wave 4 final time use module worked well, with a very high response rate. This methodology has been improved and will be utilised again in Waves 5 and 6.

This paper describes the development process, and covers the key results including the excellent response rates, and some details of the diary completion level. A particular focus is on the crucial role the Interviewer plays in improving the data quality. Comparisons will be made between the number of paper diary entries and the final electronic diary entries, with a focus also on the extra information collected by the Interviewer through formal and informal prompting.

### **Is highly protective parenting linked to child BMI?**

*Kirsten Hancock, Denny Meyer, Stephen Zubrick, Telethon Institute for Child Health Research*

In recent decades rates of child overweight and obesity have increased, while children have become less active and more sedentary. Over the same period, parents have become increasingly concerned for children's safety and independent mobility, even though the risks of harmful events have not changed. Some have argued that a trend towards overprotective parenting, and subsequent restrictions on children's independent mobility, may be linked to the increase in rates of child overweight and obesity, but there is limited research available supporting these claims. Using data from Growing Up in Australia: The Longitudinal Study of Australian Children, this study aimed to establish if any association could be drawn between child obesity and maternal protectiveness.

Longitudinal models were fitted to measure growth in Body Mass Index (BMI) from ages of 4-5 years to 10-11 years according to level of maternal protectiveness, whilst controlling for a range of socio-demographic characteristics. Results showed no initial differences in BMI at age 4-5 years by maternal protectiveness. However as children became older, the BMI of children with high maternal protection increased at a faster rate relative to children with low maternal overprotection. Logistic regression modelling also indicated that the odds of obesity became greater over time for children with highly protective mothers relative to children with low protection mothers.

These results provide evidence of a relationship between maternal protectiveness and child overweight and obesity. However, further research is required to understand the mechanisms that link these two concepts.

## **The role of parenting in explaining income gradients in childhood obesity**

*Jan Nicholson, Judith Brown, Dorothy Broom, Parenting Research Centre, Australia*

In developed countries, children from households with lower income have higher risks for obesity, with income gradients emerging in middle childhood. While children's individual lifestyle behaviours directly affect obesity, how the family environment shapes these behaviours is less clear. In this paper we examine the longitudinal associations between family environment (household income, maternal wellbeing and parenting), children's lifestyle behaviours (snacking, TV viewing, physical activity) and obesity. Using the first three waves of the Longitudinal Study of Australian Children (LSAC) kindergarten cohort (n=2045), we examined the association between family environment (Wave 1, child aged 4-5), children's lifestyle behaviours (Wave 2, child aged 6-7), and child weight status (Wave 3, child aged 8-9). Results from the structural equation model revealed a clear pathway linking household income, mothers' parenting behaviour, television viewing and child weight status. Mothers from low income households were more likely to be overweight, more stressed and use less consistent parenting practises. Children of mothers who were overweight or who were less consistent in their parenting, engaged more in obesogenic lifestyle behaviours. These results help us to understand how low income impacts on children's weight and suggests possible modifiable risk factors to be addressed.

## **Maternal employment and childhood overweight at age 7: Findings from the Millennium Cohort Study (MCS)**

*Steven Hope, Anna Pearce, Catherine Law, University College London, UK*

**Background:** Cumulative exposure to maternal employment may be associated with childhood overweight, but there has been little longitudinal research in this area. We investigate the relationship between early maternal employment and overweight at age 7 years in the MCS.

**Methods:** Cross-sectional relationships between maternal employment at 9 months, 3, 5 and 7 years and childhood overweight at age 7 were modelled, including adjustment for early life covariates. Following this, the association between cumulative employment and overweight was investigated. Overweight (including obesity) was defined by International Obesity Task Force cut-offs.

**Results:** The risk of overweight was elevated among children whose mothers were employed full-time at age 7 years, compared to those who were not employed (unadjusted Risk Ratio (uRR)=1.12,  $p<0.05$ ), increasing slightly after adjustment (adjusted Risk Ratio (aRR)=1.19,  $p<0.01$ ). Full-time employment at each previous MCS sweep was also significantly associated with overweight at age 7. Prolonged full-time employment between 9 months and age 7 was a particular risk for overweight (employed full-time in four sweeps vs. never: uRR=1.40,  $p<0.01$ ; aRR=1.47,  $p<0.001$ ).

**Conclusions:** This longitudinal analysis supports an association between full-time maternal employment and overweight. Possible explanations and implications will be discussed.

**Symposium**                      **Effects of childhood social and economic factors on wellbeing in young adulthood**  
**Convenor: Katherine McGonagle**

**The US Panel Study of Income Dynamics – transition into adulthood study: overview and potential for life course research**

*Katherine McGonagle, Narayan Sastry, University of Michigan, USA*

There is increasing scientific interest in the transition to adulthood due to the major changes in this period of life that have occurred over the past four decades. Yet a limited picture of how U.S. youth pass through this period or how characteristics of the youth's family of origin and childhood experiences affect this passage exists. In 2005, in recognition that the years from 18-24 are critical for life span development, the U.S. Panel Study of Income Dynamics began a new study designed to follow children in its families who had participated in a 3-wave Child Development Supplement and had turned age 18, called the Transition to Adulthood (TA) study. The scientific aim of TA is to understand the causes and consequences of social, economic, and health transitions of young adults. Like the UK Understanding Society study and other genealogical panels, TA provides extensive information on educational, occupational, and relationship transitions that mark the changeover to adulthood in developed countries. This presentation will set the context for the two symposia featuring research using the TA data by providing information about the study, including a description of the sample, content domains, and data accessibility.

**The effects of childhood health on young adult education**

*Narayan Sastry, University of Michigan, USA*

The association between socioeconomic status (SES) and health over the lifecourse is a topic of major research and policy interest. Although there is consistent support for the social causation hypothesis (i.e., that SES affects subsequent health), evidence for the social selection hypothesis (i.e., that health affects subsequent SES) is mixed. These findings suggest that selection mechanisms have a minor influence on interrelationship between SES and health. However, a growing number of studies challenge this assumption. Our research seeks to extend these studies in a number of important ways. Drawing on multiple waves of data from the Panel Study of Income Dynamics (PSID), the PSID Child Development Supplement, and the PSID Transition into Adulthood study, we examine the effect of early life and childhood health status on educational attainment in young adulthood. Specifically, we model the relationship between multiple indicators of childhood physical and mental health (including obesity, chronic disease conditions, behavior problems, and mother's rating of the child's health) and two measures of educational attainment: high school completion and college enrollment. The models also incorporate a rich set of controls for family background from the extensive PSID. We find that the effects of SES on educational attainment are not altered by controlling for child health and uncover significant effects of child health on subsequent educational attainment, with the most notable effect being due to children's externalizing behavioral problems.

**The influence of childhood poverty and race on young adult health outcomes**

*Marybeth Mattingly, University of New Hampshire, USA; Suzanne Bianchi, University of California, USA*

Using the Panel Study of Income Dynamics, we examine poverty experiences throughout childhood, including the timing, depth, and duration of poverty, in conjunction with race to determine how these characteristics are related to health outcomes – including asthma, diabetes, high blood pressure, psychological well-being, other chronic conditions, and self-rated overall health – during the “transition to adulthood” years (ages 18-24). This study of health during young adulthood is particularly critical for three main reasons. First, these are developmentally important years, as many

of the decisions made and experiences gained will set the stage for future success. Second, this age group has historically had very low rates of health insurance coverage in the U.S. and thus may suffer even greater health consequences than other age groups as a result of any health disparities. Finally, some prior research suggests disparities in health are already quite large by early adulthood. These findings are based on data sets that do not have the history of child poverty that is available in the PSID. Hence, the early life correlates of young adult health disparities have not been adequately studied.

### **Socioeconomic status and substance use among young adults: a comparison across constructs and drugs**

*Patrick Wightman, Megan Patrick et al, University of Michigan, USA*

**Objective:** Little consensus exists regarding the relationship between socioeconomic status (SES) and substance use. We examine the associations of three indicators of family SES during childhood – income, wealth, and parent education – with smoking, alcohol use, and marijuana use during young adulthood.

**Method:** Data were from the national Panel Study of Income Dynamics (PSID), a survey of U.S. families that incorporates data from parents and their children. In 2005 and 2007, PSID was supplemented with two waves of Transition into Adulthood (TA) data drawn from a national sample of young adults, 18 to 23 years old. Data from the young adults (N=1203) on their current use of alcohol, cigarettes, and marijuana were used as outcome variables in logistic regressions.

**Results:** Smoking in young adulthood was associated with lower childhood family SES, although the association was explained by demographic and social role covariates. Alcohol use and marijuana use in young adulthood were associated with higher childhood family SES, even after controlling for covariates.

**Conclusions:** Findings based on three indicators of family background SES converged in describing unique patterns for smoking and for alcohol and for marijuana use among young adults, although functional relationships across SES measures varied.

### **The grandchildren of Brown: intergenerational returns to education**

*Rucker Johnson, University of California, USA*

In the US, there is a high degree of persistence in economic status and health status across generations. While policies that promote equalization of educational opportunity have been emphasized as keys to break the intergenerational cycle of poverty, there is limited causal evidence of the mechanisms that underlie intergenerational immobility. This paper uses the Panel Study of Income Dynamics spanning 4 decades (PSID-CDS-TA: 1968-2009) to link three generations of adult outcomes, and isolates the causal effect of education on the next generation's well-being. The analyses exploit the historical period and quasi-random timing of court-ordered school desegregation to quantify the extent to which children's well-being can be improved by increased parental education and document the intergenerational returns to education. The 2SLS/IV framework and intergenerational research design enables this work to assess the impact of school desegregation on children and their families into the third generation. I find a considerable impact of school desegregation that persists to influence the outcomes of the next generation. The findings demonstrate that part of the intergenerational transmission of inequality can be attributable to school quality related influences; and they highlight parental education as a causal determinant of generational mobility.

### **Gender-specific division of individual chores: how is it explained by couples?**

*Anna Dechant, University of Bamberg, Germany*

German couples often divide paid and unpaid work almost equally at the beginning of their relationship. Over the years, the division gets increasingly polar. A main influencing factor is the transition to parenthood. This pattern seems to be very stable across cohorts. Economic theories assume that societal changes influence the division of labour in couples due to rationally calculating and bargaining actors. As to norm-based theories, traditional arrangements are rather stable as they result from gender roles. A qualitative, longitudinal and event-centred analysis provides deep insights into the dynamics and allows analysing the underlying mechanisms. The used interviews were conducted during the pregnancy and about one year afterwards. They include retro and prospective information on the couples' division of labour as well as on related plans, conflicts etc and allow to find different pathways in the overall arrangement. Before and during the pregnancy, most of the interviewed couples share the domestic field almost equally. Individual tasks (e.g. cooking, doing the laundry, and repairing) are often divided in a gender-specific way. The aim of the proposal is to describe and explain the gender-specific division of chores. Related questions are: How did this division develop and how is it explained? How does it change during the transition to parenthood? How are different pathways of the division of paid and unpaid work connected to the gender-specific division of individual chores? How do couples negotiate about equality of dividing chores before and after transiting to parenthood? Reasons and explanations verbalised by the actors are analysed and contrasted with different theoretical assumptions concerning couples' division of labour.

### **Holding a leadership position in dual-career couples: do resources of the partner matter?**

*Miriam Bröckel, Katrin Golsch, Anne Busch, University of Bielefeld, Germany*

In Germany, as in other modern societies, a low representation of women in high hierarchical positions is a stable form of gender inequality on the labor market. Research analyzing this vertical dimension of inequality deals with human capital explanations, institutional and political factors, occupational sex segregation as well as family structure that lead to different career opportunities for women and men. The concepts of "linked lives" and "coupled careers" point out that not only individual characteristics and resources but also those of the partner are important dimensions to explain career paths. The present study therefore examines in how far partnership characteristics influence gender specific probabilities of being in a leadership position.

With data of the German Socio-economic Panel Study 1984-2010 we analyze dual career couples in a life-course perspective. Several measurements of resources and characteristics of both partners (e.g. education, labor market experience, working hours, occupational sex segregation) as well as the relation between partners' resources (including the division of domestic labor between partners (DODL) as an indicator for power relations in the partnership) are taken into account. Furthermore we consider the development of structural indicators such as the rate of childcare supply or different labor market formations.

### **Female education, labour markets and fertility outcomes: 1<sup>st</sup> births in Belgium after 1960**

*Karel Neels, University of Antwerp, Belgium*

After two decades of low fertility throughout the 1980s and the 1990s, the period TFR in Belgium increased from 1.56 children in 1995 to 1.85 in 2008. This recent recovery of the period TFR coincides with a slowing down in the pace of fertility postponement, but also with a marked decline in unemployment rates since the mid 1990s. In this paper we combine contextual data on economic growth and labour market conditions with individual-level maternity history data from the 2001 census to document the tempo-quantum interplay in Belgian fertility trends between 1960 and 2000.

More specifically, we illustrate how rising female educational attainment and labour force participation in a context of limited economic and employment growth between the early 1970s and 1995 gave rise to excess labour supply and an unprecedented increase in unemployment rates. The results indicate that labour market conditions are more strongly correlated to variation in first birth hazards than more general economic indicators such as GDP-growth. Rising unemployment negatively affects first birth hazards at younger ages and this effect is found to be more articulated among higher educated women. The results also provide empirical support for recuperation of fertility after age 30 net of prevailing labour market conditions, particularly among women with tertiary education. Such recuperation effects account for the larger degree of stability in (lagged) cohort fertility indicators during the period considered. The results for Belgium suggest that access to stable employment in economically adverse times is an important condition to reduce period variation in fertility levels over and above policies that ease the work-family conflict. In an epilogue the Belgian results are put in perspective by considering female labour force participation, labour market conditions and fertility trends for a larger set of European countries.

### **Long-distance moves and their effects on job careers in dual-earner couples in the UK and Germany**

*Philipp Lersch, BIGSSS/University of Bremen, Germany*

Dual-earner couples must geographically coordinate their two places of work and their place of residence. After long-distance moves, this coordination must be re-negotiated. Chances are high that at least initially one partner will not find adequate work close to the new residence. Which partners are more likely to advance their job career after long-distance moves? First, bargaining models assume that partners with higher threat points, which depend foremost on alternatives outside the couple, are more likely to assert their interest and benefit from moves. Second, doing gender theory assumes that social gender norms and individual gender-appropriate behaviour affect whether female or male partners are more likely to benefit from moves. Gender appropriate behaviour may also be influenced by gender norms that vary across societal contexts. To test these theoretical assumptions, I draw longitudinal data from the British Household Panel Survey and the German Socio-Economic Panel Study (1991-2008). I analyse the data using actor-partner interdependence models which allow measuring bi-directional influences in dyadic relationships. The results advance knowledge about decision making in couples and provide important insights in the effects of residential mobility on the job careers of both partners in dual-earner couples.

### **Symposium Learning in poverty: evidence from a linked household and school panel study - Young Lives**

**Convenor: Caine Rolleston**

### **Going private: household characteristics and private school choice: evidence from a longitudinal two-cohort study in Andhra Pradesh, India**

*Martin Woodhead, Melanie Frost, Zoe James, Young Lives, UK*

This paper draws on detailed individual school history data to explore the link between a growing private school sector and evidence of increasingly divergent educational trajectories. Drawing on Young Lives longitudinal, two cohort data from Andhra Pradesh, we ask which children access private versus government schools and how this has changed between 1994-5 and 2001-2. Uptake of private schooling increased dramatically from 24 per cent to 44 per cent of children within our sample by age 8. However, girls, children from rural areas and lower socio-economic backgrounds continue to be less likely to enrol in private schooling. Parental aspirations and education levels increase the probability that children attend private school, while having an older brother in the household reduces children's chances. Importantly, while in some respects the access gaps have decreased over the past decade, the gender gap seems to be widening in rural areas. The study draws attention to



the impact of unregulated growth in private schools, which may extend educational opportunities for some, but at the same time reinforce educational disadvantage for those from the most marginalised groups.

### **The impact of peer performance on primary school attainment in Vietnam**

*Sofya Krutikova, Manasa Patnam, Caine Rolleston, Young Lives, UK*

In this paper we investigate peer effects in primary schools in Vietnam. We estimate both contextual and endogenous effects and explore peer effect heterogeneity. We utilise Young Lives longitudinal data for a cohort of 1300 children who have been followed from birth, combined with newly collected data on the schools that these children are currently attending (at age 10). We utilise individual child assessments of peer relationships, combined with multiple rounds of test data and longitudinal data on cognitive skills before attending school to estimate the effects of fixed peer characteristics and academic attainment on child performance. Controlling for selection into schools, having wealthier classmates is found to have a positive impact on school attainment. Further, there is evidence of an impact of peer attainment on own attainment. The nature of this impact depends on the ability of the child relative to that of their peers. High ability children make significant gains in achievement if they are in a class with high ability peers, relative to high ability children in classes with lower ability peers. Moreover, the combination of school-level and longitudinal individual-level data allows us to investigate non-linearity of peer effects.

### **Sources of the private school advantage in India**

*Abhijeet Singh, Young Lives, UK*

Students in private schools have been shown to outperform children in government schools in India by several studies; however, these studies have been constrained by their use of only cross-sectional data, a lack of extensive information about school and household environments, and unavailability of detailed test data. In this paper, I use a unique longitudinal dataset collected by Young Lives in Andhra Pradesh State between 2002 and 2011, which combines detailed school and household-level information, to show that the gap between the achievement of children in private and government schools (the private school premium) is present across all age groups of children, at all stages of schooling, and across both mathematics and language abilities.

This premium is not primarily driven by household investments, school infrastructure, teacher qualifications or experience, teacher knowledge as assessed by an independently administered test, observable classroom characteristics, or selection into private schooling based on household characteristics, ability or motivation. Rather, it seems to be driven by teacher absenteeism and also a lower degree of teacher support for children in public schools. Children in government schools also report significantly less engagement at school.

**Symposium                      Opportunities for multi-level analyses of children's health and well-being**  
**Convenor: Udo Reulbach**

### **Conceptual framework of Growing Up in Ireland and opportunities for multilevel analyses of children's health and well-being**

Uri Bronfenbrenner's Ecological Systems Theory is a seminal foundation for a multi-level approach towards child's development comprising micro-, meso-, exo- and macrosystems. Children have face to face interactions with other individuals, organisations and society. The various systems are linked to each other and actors in the microsystem are also linked to each other and form the mesosystem. Beyond the mesosystem, the exo- and macrosystem impact on the individual's development: the exosystem consists of formal and informal structured organisations and settings, whereas culturally

specific attitude and belief systems form the macrosystem. Layers of the various systems can modify the strength and even direction of influences observed at the microlevel. Research findings of health – related associations and interactions in each layer will be discussed.

### **Family processes as mediators of family structure effects on children’s social and emotional outcomes**

*Tom O’Dowd, Elizabeth Nixon, Trinity College Dublin, Ireland*

Much has been written about the effect of family structure on children’s development. However, parenting and the quality of family relationships have emerged as important mediators of children’s well-being within different family contexts.

The aim of this paper is to assess the mediating processes through which family structure affects children’s social and emotional development. Using data from the Growing up in Ireland study, associations between family structure and children’s outcomes were examined, and the role of parenting style, mother-child relationships, and maternal depression were investigated as potential mediators, in a sample of 8,568 nine-year-old children. Social and emotional outcomes were assessed by means of teacher- and mother-completed Strengths and Difficulties Questionnaire.

The findings indicate that family structure was significantly associated with children’s developmental outcomes, such that children in non-nuclear family structures displayed poorer outcomes. The impact of family structure on outcomes was partially mediated by parenting processes, maternal psychological well-being, as well as child characteristics, such as gender, and temperament. The findings from the study support the theoretical position that family processes are inextricably linked to family structure, and while the impact of family structure is mediated through family processes, these processes in turn are influenced in different ways by the structure of the household.

### **Relationship between children’s well-being and poverty**

*James Williams, Economic and Social Research Institute, Ireland*

Evidence from the literature indicates that children who are brought up in low income families have poorer outcomes in terms of physical, emotional and cognitive/intellectual development. Growing Up in poverty will affect different groups of children in different ways. The adverse impacts of poverty and low income may be mediated through a range of mechanisms including nutritional intake, environment or neighbourhood factors, access to medical insurance, exposure to risky behaviours (their own as well as their parents) and so on.

This presentation uses data from the Growing Up in Ireland study to investigate the relationship between a number of child well-being outcomes on the one hand and low income and poverty on the other. Outcomes considered include general health status, health care utilisation, incidence of chronic illness, experience of accidents and injuries, behavioural and emotional problems. Bivariate and multivariate relationship between poverty and relevant outcomes are considered.

### **Cross-national estimation of smoking prevalences: the role of retrospective data**

*Laura Fumagalli, Elena Fumagalli, Dean Lillard, University of Essex, UK*

We evaluate and compare life-course smoking behavior of older people surveyed by the Survey of Health, Ageing, and Retirement in Europe (SHARE). These surveys initially sample people age 50 and older (and their spouses) and then resurvey them at regular intervals. We describe and compare patterns of smoking behavior of different cohorts of older residents in each country. We incorporate a few new methods to adjust for known biases that arise in retrospectively reported (smoking) data. We first adjust our estimates of life-course prevalence using a new algorithm developed by Christophoulou et al (2011) to account for differential mortality rates of smokers and non smokers.

Then we use the method developed by Bar and Lillard (2011), to correct for bias that is introduced when survey respondents give only approximate ages in response to questions about the age they started to smoke and the age they quit. Finally, we account for cognitive aging, since deteriorated cognitive abilities in old people can affect the way past events are reported.

### **Can information collected during the pre- and perinatal period improve the identification of developmental delay in infancy?**

*Demetris Pillas, Marjo-Riitta Jarvelin et al, University of Oxford, UK*

**Objective:** Infancy is established as one of the most critical periods for development, yet developmental delay during this period is a condition which remains largely undiagnosed and uncared for. The aim of this study is to explore the potential of utilising measures during the pre- and perinatal period to facilitate early identification of infants at risk of developmental delay.

**Methods:** The study used data from the 1966 Northern Finland Birth Cohort (NFBC1966) (n=12,138 infants). Findings were validated in a second, UK-based, birth cohort - the Millennium Cohort Study (MCS) (n=18,819 infants). Infant developmental delay was assessed through measures of motor and language delay.

**Results:** Eight factors were identified which were significant predictors of developmental delay in both the NFBC1966 and the MCS. Together, the identified factors explained only a small percentage of the variance of infant developmental delay in the two cohorts. However, in the group of infants with multiple risk factors, prediction power was substantially higher.

**Conclusion:** Obtaining information on the combined presence of only a limited number of pre- and perinatal risk factors may facilitate the identification of a large proportion of high-risk newborns which will subsequently suffer from infant developmentally delay.

### **The effect of prenatal nutrition on childhood IQ, using a Mendelian randomization approach in the ALSPAC cohort**

*Sarah Lewis, University of Bristol, UK*

Nutrition plays an essential role in brain development, which is most rapid during foetal development and in early infancy. Nutrients found to be lacking in the mothers' diet could, if important for brain development, be modified to ensure that the child's cognitive ability is not impaired. However, observational studies are heavily confounded and subject to substantial measurement error, which has resulted in uncertainty in this area. Genetic variants which have an effect on nutrient level either by influencing metabolism, transport or cellular uptake of the nutrient are not subject to confounding by other lifestyle factors. We used these as proxies for exposure to examine the effects of iron, vitamin B12 and vitamin D in the ALSPAC birth cohort. AUK cohort study of approximately 14,500 mothers recruited during pregnancy, in which the children have now been followed up for 20 years, and detailed information on exposures and phenotypes plus DNA have been collected. We found some evidence that low levels of vitamin B12 during pregnancy had a negative effect on child's IQ score, but no evidence that iron or vitamin D levels were important. However, this is a healthy cohort in which the vast majority of mothers were not nutrient deficient.

### **Family dynamics during childhood: replication of family structure transitions in later adulthood?**

*Michael Feldhaus, Mandy Boehnke, Franziska Krohn, Bremen University, Germany*

Numerous researchers have demonstrated that children of divorce have an increased risk to end their own marriages (e.g. Bumpass/Sweet 1972; Diekmann/Engelhardt 1995; Teachman 2002; Li/Wu 2008). Focus of these studies is the link between parents' and children's marital instability and potential explanatory mechanisms. In the following, increased diversity in parent histories has led to consideration of multiple dimensions of childhood living arrangements (such as living in a single parent family, step family, number of transitions) on the subsequent risk of marital dissolution (Wolfinger 2000, Teachman 2002). This study follows this approach: Do biographical transitions experienced during childhood lead to similar family biographies in later adulthood or have an influence on the family formation process of the offspring generation? Questions are not restricted to one important transition in later adulthood (like divorce), instead we expand the analysis by using different family patterns as outcome variable (no kids at all, biological kids and continuously married, living as single parent, living in a step family or in a blended family). Data basis is the German Family Panel (Huinink et al. 2011) which allows us to compare partnership as well as family-related information in later life with the biographical experiences in early childhood.

### **Intergenerational downward mobility over historical time. A longitudinal analysis based on birth cohorts 1944 - 1986 in Germany**

*Sophie Müller, University of Bamberg, Germany*

According to the concept of relative risk aversion individuals assign priority to avoid status demotion in educational decisions. But how successful are they actually in reaching their parents' educational level, how does this develop over time and who has the highest risks of downward mobility? These questions are particularly interesting with regard to persons whose parents have tertiary degrees. First, structurally they have the highest risk of downward mobility as their parents have reached the highest educational level (doctoral degrees disregarded). Second, changes in the composition of this group due to the expansion of the tertiary level might lead to changes in the risk of downward mobility. Third, new options of pathways leading to tertiary degrees have occurred and – with the introduction of the university of applied sciences – differentiation of tertiary degrees has increased. This might influence intergenerational transmission of educational attainment. Hypotheses are tested on retrospective longitudinal data of the German National Educational Panel Study stage 8 – Adult Education and Lifelong Learning using sequence and regression analysis. Results suggest that the risk of downward mobility in the group over the analysed cohorts remains rather stable, however differentiated within the group.

### **Social ties and health at the intersection of race and gender**

*Debra Umberson, Kristi Williams, et al, University of Texas-Austin, USA*

The importance of social ties to health is widely recognized. Despite persistent race disparities in health in the United States, little is known about the ways that race structures social ties or the processes through which social ties impact health. We use a social structure and personality frame, enriched with insights from an intersectionality perspective, to guide our investigation of social ties and health at the nexus of race and gender. Our integration of longitudinal population level data with qualitative data from in-depth interviews with African American and white men and women reveals substantial race disparities in the supportive and strained features of social ties across the life course and in the consequences of social ties for health in adulthood. African Americans are disadvantaged relative to whites, and this disadvantage further depends on gender, with more strained/less supportive relationships for black men than black women, but stronger effects of strained adult relationships on black women's health. African Americans, men in particular, experience dense

constellations of strain in childhood family relationships that reverberate throughout the life course to shape adult health through a complex set of psychosocial and behavioral processes.

### **How do we keep track of them? Strengths and difficulties in making longitudinal studies on children in out-of-home care**

*Mette Lausten, Tine Egelund, SFI – Danish National Centre for Social Research, Denmark*

To be able to shed light on the strengths and difficulties in being a child placed in out-of-home care, Danish National Institute of Social Research has – supplementing the Danish Longitudinal Survey of Children (DALSC) – built a longitudinal survey on ‘Children in out-of-home Care’ (CIC) covering all children born in 1995, who are or have been in out-of-home care in Denmark. The survey, conducted in 2003, 2007 and growing to 1,700 15-year-olds at the survey in 2011, includes questionnaires to the care environment and the mothers from age 7 as well as the children from age 11, questionnaires that also include the strength and difficulties questionnaire (SDQ) at age 11 and 15 and DAWBA sections on Depression, Behavior, and Dieting, weight and body shape.

As we in Denmark have admission to use combines administrative data and survey data, we can keep track of all through the administrative data, but due to huge attrition the survey data lacks information on many of the children and how they cope with everyday life.

This paper analyses the natural increase and the unnatural attrition over time in the longitudinal survey and discusses the challenge in making longitudinal analyses on this kind of data.

### **Cohort characteristics and early findings from Born in Bradford**

*Neil Small, Emily Petherick, University of Bradford, UK*

Born in Bradford (BiB) was established in 2007 to examine how genetic, nutritional, environmental, behavioural and social factors impact on health and development in a deprived multi-ethnic population in one city in the north of England. Between 2007 and 2011 pregnant women (~28 weeks gestation) were recruited. This resulted in the cohort consisting of 13776 women, their babies and 3448 of their partners. 45% of the cohort mothers report their ethnicity as Pakistani, 39.4% as white British. We summarises cohort design, emphasising the development of data sharing protocols and examining the potential and challenges of using data collected as part of routine clinical care for research. We report key features of the cohort profile, including comparisons of behavioural and social factors by ethnicity. Findings so far are limited to analysis of cohort characteristics and early infant development: for example, significant differences in measures of socio-economic position according to ethnicity, country of birth and age at migration; birth weight differs significantly by ethnicity and difference persists over generations; patterns of infant growth differ significantly from WHO standards.

### **Identifying trajectories in childhood stuttering**

*Laura Miller, Rosemarie Hayhow, University of Bristol, UK*

Longitudinal studies of childhood stuttering and clinical practice differentiate between children who have never demonstrated stuttering, those who recover and those whose stuttering persists. This paper will present the different stuttering pathways or trajectories that are present within 7015 children born between 1st April 1991 and 31st December 1992 from the Avon Longitudinal Study of Parents and Children (ALSPAC). Parents answered questions about their child’s fluency (Does he/she stumble or get stuck on words, or repeat them many times?) with three possible response categories (never, sometimes, often) when their child was 38, 57, 69, and 81 months of age. These four time points and three response categories provide 81 potential trajectories. In our data 75 of these were present which represents far greater variation than the three natural history profiles described in

previous studies. Latent class analysis allows us to classify these numerous trajectories into a smaller number of underlying (latent) trajectory paths. The analysis identifies the best fit in terms of the underlying trajectories, rather than relying on a-priori classification of each case at each time point. This general population sample shows additional trajectories to those used clinically and these emergent trajectories will be presented and discussed.

### **Uncovering the ups and downs of designing an Iranian longitudinal study on children who do grade skipping (age 8 to 16)**

*Ebrahim Talae, Tarbiat Modares University, Iran*

This paper presents the design and structure of a recently funded (and probably the first) longitudinal study in Iran. The study follows the educational, social/behavioural and personality development of all children who do grade skipping in primary phase of education (age 8) in the current academic year (2012-2013) up until they get out of compulsory education (age 16). The study has three-fold aims: to investigate the impact of grade skipping- a highly increasing phenomenon in Iranian education- on children's school attainment and social/personality development over and beyond the impacts from children's individual, familial and home learning environment characteristics; to inform policy about the functioning of current measures about grade skipping, to uncover the potentials and challenges of designing and implementing a nationally representative longitudinal study in Iran in terms of long term funding and the required tests and measures. The presentation reports both the design characteristics of the study and the long term challenges it faced to convince policy makers about the contribution of longitudinal research.

### **Exploring household dynamics: the reciprocal effects of parents and child's characteristics**

*Laia Becares, University of Manchester, UK; Lidia Panico, Institut National d'Etudes Demographiques; Elizabeth Webb, Imperial College, London*

Studies show a strong relationship between maternal mental health and child socio-emotional development. This literature is based on examinations of dyadic relationships, where maternal mental health is hypothesised to have a direct effect on children's development. However, household dynamics are complex, with other household members having an effect both on the mother and the child. Furthermore, the child's characteristics can also have a feedback effect on their carers' outcomes.

In this paper, we employ a multilevel structural equation model with cross lagged effects to understand the reciprocal effects of maternal mental health, child socio-emotional development, and quality of parental relationship. Analyses were conducted on longitudinal data from the Millennium Cohort Study, a prospective national birth cohort of children born in the UK 2000-2001. The Millennium Cohort Study has a wealth of information on the socioeconomic background of the household, and has collected data on the mother's mental health (Kessler 6), the quality of the parents' relationship (Golombok-Rust), and the children's socio-emotional development (SDQ). Our results relate to households with two continuously partnered parents, with complete data on the three key variables, producing a sample size of just over 8,000 households. In this work we look at data relating to age 3 and 5.

We find complex significant relationships between the key variables, pointing to the need to consider all household members to properly capture household dynamics and to understand drivers of parental and child wellbeing.

### **Maternal repartnering: do child custody arrangements matter?**

*Lawrence Berger, INED, France; Lidia Panico, LSE, UK, Anne Solaz, INED, France*

Women, especially mothers, are less likely than men to form new partnerships after union dissolution. This may reflect that women are often primary custodial parents, which may deter finding a new partner because caring for full-time coresidential children diminishes time available to meet potential partners and build relationships and/or that mothers are penalized on the relationship market relative to childless women. Given increases in shared physical custody in many countries, however, this stylized fact might change if fathers increase their child rearing responsibilities. Using data from the British Millennium Cohort Study and discrete-time event history analyses, we examine the prevalence and predictors of maternal repartnering into marriage or cohabitation during the first 7 years of a child's life. Specifically, we investigate: (1) whether single mothers whose former partners' share physical custody are more likely to find new partners than those who have their children full-time, and (2) how child characteristics (age, behaviour) may affect mothers' chances of repartnering. We examine repartnering behaviors for mothers who were married or cohabiting, as well as those who were single at the time of the child's birth. Our results will have implications for public policies regarding family formation and child and family support and wellbeing.

### **Family structure, maternal migration status and childhood health: evidence from the UK**

*Lidia Panico, Wendy Sigle-Rushton, London School of Economics, UK*

The resources available to different family types and the form and function of the family may vary across migratory groups. In non-migrant populations, researchers have posited that the relationship between family structure and child health is driven by differential access to resources. In the UK, migrants tend to be disadvantaged socio-economically, therefore alternative pathways, such as social support or health behaviors might be at play instead. Second generation migrants –whose socio-economic circumstances remain disadvantaged, but whose behaviors resemble native-born parents', can provide additional insights. Using the Millennium Cohort Study, this paper will explore the relationship between family structure, maternal migration and childhood respiratory health. Preliminary results show that first generation households are more likely to contain two married parents. Married first generation migrants do not appear to enjoy the same socio-economic benefits that are associated with this family structure; however, first generation migrants tend to have better health behaviours (for example, lower smoking rates and higher breastfeeding initiation rates). If health behaviours do not differ dramatically by family structure, differentials in child health by family structure should be less pronounced amongst the migrant population. Preliminary results from logistic models of childhood asthma suggest this to be the case, when we compare first generation migrants with women whose parents were native born.

### **Do poor children do better in richer neighbourhoods? Associations between reading ability, relative poverty and median neighbourhood income in England**

*Anja Scheiwe, Mai Stafford et al, University College, London*

**Aim:** To test whether the relationship between reading ability and neighbourhood income is different for poor versus non-poor children.

**Design:** Secondary analysis of data from the UK Millennium Cohort Study (MCS). Participants: 6,772 children with complete information who were living in England at ages 5 and 7.

**Outcome:** Reading ability at age 7.

**Methods:** Neighbourhoods were defined as Lower Layer Super Output Areas. Median income is available via the Census Dissemination Unit and was linked into the MCS data. Differences in reading ability across neighbourhoods were estimated via multilevel models with cross-level interaction terms.

Results: After additionally adjusting for ability at age 5, sex, ethnicity, maternal qualifications and social class, there is a positive association between reading scores at age 7 and neighbourhood income, but only for children from poor families. The average difference in reading scores (sample mean =113.2) between poor and non-poor children was 4.3 points in the poorest areas (=lowest quintile of neighbourhood income), while in more affluent areas this was reduced to only 0.7 points. Conclusion: In terms of reading ability, significant cross-level interactions suggest that in England, children from poor families but not children from non-poor families benefit from living in more affluent neighbourhoods.

**Symposium                      The Swiss National Centre of Competence in Research LIVES: first steps and results**

**Convenor: Dario Spini**

**Overcoming vulnerability: life course perspectives**

*Dario Spini, Michel Oris, Laura Bernardi, University of Lausanne, Switzerland*

This first communication will present the Swiss National Centre of Competence in Research LIVES “Overcoming vulnerability: life course perspectives” that was launched in 2011. This research centre involves 130 researchers working in Switzerland on life course dynamics of vulnerability. Fourteen research projects are part of the program and approach vulnerability from young adulthood to old age from different perspectives of the social sciences. Four research axes are developed: (1) The accumulation of (dis)advantages and social inequalities analyzes social inequalities as caused by or as a consequence of long life trajectories: Material or symbolic resources, social relations, work careers, health, and psycho-sociological resources. (2) The diffusion of stress will be analyzed across connected people or connected dimensions of the life course within the individual. (3) Resources to overcome vulnerability focuses on resources that can be mobilized across the life course to counter detrimental effects of stress and social inequalities. These include psychosocial, relational, and institutional resources, notably public policies. (4) Methodological advances on longitudinal analyses and methods to study vulnerable populations: The NCCR LIVES will propose innovative methods to include and follow vulnerable populations, analyze long term trajectories and measure vulnerability multidimensionally and at different levels (individual to collective).

**Comparing data quality in self- and interviewer-administered life history calendars in a survey of young adults**

*Davide Morselli, Caroline Roberts et al, University of Lausanne, Switzerland*

Most of the research projects connected to LIVES use Life History Calendars (LHC) to collect retrospective data about significant life events. Previous studies have shown that LHCs provide a useful tool for collecting such data and that they generate fewer memory biases in self-reports than conventional questionnaires. However, some methodological questions about the use of LHCs in surveys remain. For example, it is still not clear whether LHCs can be used with all types of populations, or whether they may be more suitable for certain sub-groups. Furthermore, little research has investigated LHC suitability for different modes of data collection. In this study we use data from a young adult population of second-generation immigrants in Switzerland. The aim of the study is to investigate potential differences in data quality between paper self-administered LHCs sent by mail prior to a face-to-face interview, and assisted self-administered LHCs completed during a face-to-face interview, in order to evaluate the costs and benefits of each mode. We present preliminary findings of our analyses of data quality, based on validation of calendar reports against information provided in structured interview, external records (where available), and interviewer ratings of respondents’ completion of the calendar task.



## **School to vocational training and labor market transitions: A social psychological approach to life projects and transition management**

*Véronique Eicher, Christian Staerklé et al, University of Lausanne, Switzerland*

This contribution presents results from the first wave of a longitudinal, social psychological study on the transition between general education, vocational training and labor market entry carried out in the framework of the NCCR LIVES. Previous research has shown that people's goals and life projects are influenced by previous experiences of success or failure (Nurmi & Salmela-Aro, 2002) and that people see more or less barriers to their goals depending on their gender and ethnicity (McWhirter, 1997). In this study, we investigate potential differences in young people's projects and their assessment of resources to achieve these projects as a function of different types of vulnerability. Participants are young adults from Switzerland, aged 15 to 30, who are in different stages of career advancement (pre-apprenticeship, apprenticeship, first steady employment). Our results show that people's work status in terms of stability (pre-apprentices, apprentices, employees) influences the type of projects they choose (e.g., professional projects vs. relational projects), but does not influence their perceived achievement and barriers. These latter appraisals are influenced by internal vulnerabilities like lack of control, perceived discrimination and perceived material vulnerability.

## **Personal perception of the professional experience – the role of individual resources on the relationship between professional situation and well-being in adults living in Switzerland**

*Christian Maggiori, Jérôme Rossier, Franciska Krings, University of Lausanne, Switzerland*

Considering the profound changes that have occurred in the labor market reality during the last two decades, the main goal of this presentation is to explore the role of individual resources and characteristics in the relationship between the professional situation and general well-being. Concerning the professional situation, particular attention is given to unstable employment and specific unemployment factors (e.g., length of unemployment and perceived discrimination during the job search process). Further, the design and methodological characteristics (e.g., data collection procedure) of this eight-year longitudinal project on professional trajectories will be discussed. The sample (n=2400) consists of employed and unemployed Swiss and non-Swiss adults living in Switzerland (25-55 years). Data collection is currently occurring as part of the 1st wave of the larger project. Professional situation is assessed using study-specific developed items and the Job Content Questionnaire (Karasek, 1985). Individual characteristics and resources are measured using, for example, the Career Adapt-Abilities Scale (Savickas & Porfeli, 2012). Finally, well-being outcomes are assessed using questionnaires such as the General Health Questionnaire - 12 items (Goldberg & Williams, 1988). Hierarchical multiple regression analyses will be conducted to assess the moderator effects of personal characteristics in the relation between professional situations and well-being outcomes.