VOLUME 5 | ISSUE 2 | **MAY 2014**

ISSN 1757-9597

Longitudinal and Life Course Studies: International Journal

Published by

SLLS Society for Longitudinal and Life Course Studies

Inside this issue

Co-sponsors:

VU university medical center

ISER Institute for Social & Economic Research

SRC Survey Research Center, University of Michigan

LLCS EDITORIAL BOARD

SUBSCRIPTIONS

For immediate access to current issue and succeeding 2014 Issues (Volume 5) and all three Issues published in 2013 (Volume 4):

Individual rate: **£20 – discounted rate £55 for 3 years** (Euro and US Dollar equivalents)

Library **rate: £200** (Euro and US Dollar equivalents) to register any number of library readers.

Society for Longitudinal and Life Course Studies (SLLS) Membership: **£65,** ***Student*** **£26,** ***Corporate*** **£300** (Euro and Dollar equivalents).

SLLS members have automatic free access to the journal among many other benefits. For further information about SLLS and details of how to join including the application form go to http://www.slls.org.uk/pages/membership.shtml

All issues are accessible free of charge 12 months after publication.

Print on demand

An attractive A5 printed version for each Issue of the journal, including all back numbers, is available at a price of £10 (Euro and US dollar equivalents) plus packaging and postage. If you want to take advantage of this opportunity of having hard copies to order, go to http://www.slls.org.uk/pages/publications.shtml where you will find a link to our online bookshop. Depending on distance, you will receive the order within two weeks of submitting it.

Please note

The reselling of personal registration subscriptions and hard copies of the journal is prohibited. Personal subscription and orders must be purchased with a debit or credit card - proof of identity may be requested.

SLLS disclaimer

CONTENTS

LLCS Journal can be accessed online at: www.llcsjournal.org

Published by

The Society for Longitudinal and Life Course Studies

Institute of Education, 20 Bedford Way, London, WC1H 0AL
info@slls.org.uk http://www.slls.org.uk

SLLS Society for Longitudinal and Life Course Studies

SLLS International Conference

Lausanne, Switzerland
9 - 11 October 2014

Lives in Translation: Life Course Research and Social Policies

Please mark your calendars for the fifth annual conference of the *Society for Longitudinal and Life Course Studies (SLLS).*

This year's keynote speakers will be **Kathleen Kiernan**, Professor of Social Policy and Demography at York University, and **Giuliano Bonoli**, Professor of Social Policy at the University of Lausanne.

The conference theme will focus mainly on social policy this year, but will also cover many other areas of longitudinal and life course studies: physical, psychological, social developmental and ageing processes and functioning within and across life course stages from infancy to old age; methods and findings of cohort studies; other sources of longitudinal data such as panel studies and record linkage; international comparisons; household, and income dynamics; intergenerational transfers and returns to learning; gene-environment interactions; 'mixed', and comparative methods; innovative methodology in design, measurement, data management, analysis and research practice (quantitative and qualitative).

Various activities are being planned for Early Career Scholars at this year's conference to help junior scholars get to know each other as well as more senior scholars in the field of life course and longitudinal studies.

The fee for conference registration will be discounted for SLLS members so please consider joining if you have not already done so! Please visit the membership page of the website for full details of how to join online www.slls.org.uk

More information about the conference will be posted on the SLLS website as it becomes available. ***Registration will open in June 2014***.

Editorial - Latest LLCS developments, and 'lost' datasets

(John Bynner)

(Michael Wadsworth, John Bynner)

This Issue of the Journal contains good news about the Journal's progress, as we develop its 'offer' to readers and authors. We also float below, suggestions for a web-based project to identify and possibly revive 'lost' datasets for potential archiving and use - a means of expanding the historical scope and richness of the suite of existing major longitudinal studies.

First, three news items:

1. In February this year we heard that the Journal has now been accepted into the SCOPUS database, attracting the accolade from one of the assessors: *"everything about this journal marks it as a high-quality, well-cited product".* The Journal's SJR (SSCImajo Journal Rank) and SNIP (Source Normalised Impact per Paper) citation indices will follow.
2. Digital Object Identifiers (DOIs) are now functional for all research papers and other items published in the Journal from Volume 4 Issue 3, 2013. They are included as resolvable URLs on the title pages, and also appear on each 'Abstract Page' (seen when a title in the Home Page Contents List is clicked). DOIs for articles published in earlier issues of LLCS are also visible on the respective Abstract Pages, but do not yet resolve; we will be working to complete all DOI functionality for back issues during the coming months.
3. Production of the print version of the Journal has been radically overhauled, including replacement of the *A5* page size by the larger and more reader-friendly *Imperial* size (17.5cm x 24.5cm). Subscribers can purchase each of the 15 Issues individually, or the whole set at a discounted price. Go to the SLLS 'online bookshop' at: http://www.slls.org.uk/#!journal-bookshop/czkc

The current Issue contains much of topical as well as historical interest. We start with a Special Section developed from an SLLS Paris 2012 conference symposium convened by Jeylan Mortimer (University of Minnesota) on the impact of the post-2008 'Great Recession' on young people and their families. Following Jeylan's overview, four papers follow on: children's achievement (Minnesota), workless families (London), family poverty (Bremen), and teenage (out-of-school) employment (Penn State, Michigan & Wisconsin). Two responses follow from discussants, Walter Heinz (Bremen) and Robert Crosnoe (Texas, Michigan, Wisconsin) who synthesise the findings in terms of lessons for theory and policy. Apart from the Special Section, there are two additional papers on: the burgeoning interest area of housing pathways (Queensland), and second-world-war history as reflected in the impact of Scottish children's evacuation on their IQ development (Edinburgh).

Identifying lost datasets

In the 21st century there has been an international upsurge of demand for the results of longitudinal enquiry and consequent investment in new longitudinal research. This is intended to address policy makers' questions about, for example, the individual and societal impact of unemployment, and to understand the relationship of social mobility with changes in educational policy. The investment is also prompted by the challenges of increasing length of lives and the socio-economic, welfare and health requirements of ageing populations. As longitudinal studies demonstrate, the course of adult life is affected significantly by the experiences and circumstances of early life and adolescence. Consequently there is a need for greater understanding of the mental and physical processes of development and of ageing. This extends to their relationship with environmental and genetic influences and the interactions between them.

That 21st century extensive investment can be seen in Britain, for example, in the continuation of the four longitudinal birth cohort studies (the *MRC National Study of Health and Development* of 5,362 babies begun in 1946, the *National Child Development Study* of 17,634 babies begun in 1958, the *1970 Birth Cohort Study* of 17,287 babies begun in 1970, and the *Avon Longitudinal Study* of 14,541individuals begun during pregnancy in 1991) and one of households (the *British Household Panel Study* of 5,500 households comprising 10,300 individuals) begun in 1991. New studies are following in their footsteps: the *Millennium Birth Cohort Study*, which first collected data from 19,000 parents in 2001; the *Understanding Society* study, which began data collections from 40,000 households in 2009; the *Life Study,* which

starts data collections from 80,000 parents and their pre-natal offspring in 2014.

There are, however, two predominant difficulties with the existing British studies. First, many of the questions that policy makers and researchers wish to address require data that cover long periods of individual lives and long periods of historical time - and the new studies will take a long time to provide that information. The second difficulty is that by the nature of their design, longitudinal studies tend to be limited in the historical era they cover and by the state of the art of measurement and conceptualisation of the topics studied at the time of each data collection. There are practical ways of managing some aspects of these time-related difficulties. For instance, accessing data collected for administrative and care purposes can give the opportunity to study very large cohorts over long periods, although at some cost in terms of data range and quality. Long periods of individual lives can also be covered by new follow-ups of samples in studies regarded as completed, although the new aims are limited by those of the original design.

Even though each of these extensions is limited in significant ways, they have nevertheless been of great value. Significant contributions to understanding development and change in individual lives have been made using longitudinal datasets retrieved from oblivion. For example the population samples from whom information was first collected in the inter-war years in the British Boyd-Orr study of diet and health, the Scottish Mental Health Survey, the Isle of White psychiatric epidemiology study and in the US, the Oakland and the Berkeley Growth Studies and the Cambridge-Somerville delinquency study, were each revived and re-contacted for new data collections many years later. Innovative and fruitful research stemmed from those new contacts in studies ranging from the impact on the adult life course of early and adolescent experience to studies of physical and cognitive ageing.

Administrative, medical care and census records have also been found of great value, using such techniques as record linkage upon which productive longitudinal studies have been built. Barker's hypotheses about biological programming, for instance, (first comprehensively described in *Mothers, babies, and disease in later life*, 1984) were in significant part founded on findings from the follow-up of adult physical health in those identified from their birth records, meticulously and routinely collected in an English county. Similarly the follow-up studies of babies who had insufficient maternal nutrition during periods of famine in the Netherlands during the Second World War, showed its life-long adverse impact on physical health and cognition and mental health, (e.g. Susser et al's 1996 study of schizophrenia risk). The UK Office for National Statistics 'Longitudinal Study' has been used to study health and for socio-economic research, using data on individuals sampled from and linked across five decennial censuses. Comparable census-based studies in other countries have made this approach a fruitful source of international comparisons.

Seen in the context of currently increased demand for research using longitudinal data, it is clear that much can be gained from such sources as well as from new studies. We propose therefore to initiate an international search for *lost* research datasets that are no longer in use but are of potential longitudinal value. Although administrative datasets with potential value for longitudinal research may not be so readily identified, information about their existence as the basis of specially designed past longitudinal studies and potentially new studies would also be helpful.

We intend to use the website of the *Society for Longitudinal and Life Course Studies* (SLLS) to enable members and the wider community of Journal readers to post information about datasets of potential value. Our intention is to bring to light largely overlooked longitudinal resources and to encourage archiving of such research data not yet indexed or documented. We hope, for example, to report on the current state and availability of data from longitudinal studies that have stopped data collection, such as Project Metropolitan undertaken in the Nordic countries, the European Longitudinal Study of Pregnancy and Childhood, and the Paths of the Generation Longitudinal Study, founded on the populations in the countries of the former Soviet Union.

If you are aware of any such lost datasets which you think have potential value as new longitudinal research resources, please draw together information about them for posting on the SLLS website (www.slls.org.uk) 'Data Sources' page where you will find a form to complete and submit. We would like to have sufficient detail in terms of, for example, aims, content, sample coverage, data custodianship, machine readability, indexation of variables and ethical approval and accessibility for research use, in order to establish the status of the data identified and bring it to the attention of potential users. We look forward to hearing from you.

Longitudinal and Life Course Studies 2014 Volume 5 Issue 2 Pp 97 – 104 *ISSN 1757-9597*

GUEST EDITORIAL: Familial transmission, support, and youth employment in hard economic times

Jeylan T Mortimer, University of Minnesota, USA
morti002@umn.edu

(Received December 2013 Revised March 2013) http://dx.doi.org/10.14301/llcs.v5i2.283

Keywords: family, parental support, economic hardship, youth unemployment

The recent 'Great Recession' started with the United States' fiscal crisis of December 2007 and quickly spread to Europe and other parts of the world. Though it has officially ended in many places (in June 2009 in the United States), it continues to have severe impacts on the lives of young people. Even by June of 2013, five years after the recession began, youth continued to suffer severe economic setbacks. Southern Europe was still hit particularly hard, with unemployment rates among 15-24 year olds reaching 58% in Greece, 55% in Spain, 40% in Portugal, and 38% in Italy (Alderman, 2013). Many unemployed and marginally employed youth from Southern Europe, especially those with skills and post-secondary degrees, have migrated to northern European countries seeking employment, only to occupy a succession of temporary, low-paying and part-time jobs and unpaid internships, interspersed with periods of joblessness. Youth unemployment in Northern Europe and the United States was not as severe, but still high by historic standards---for example, 29% for 15-24 year olds in Ireland, 21% in Britain, and 16% in the United States (16-24 year olds). In contrast, Germany, with its still functioning, though threatened, apprenticeship system, was quite successful in protecting its young people throughout the recession, as evidenced by its very low, 8% rate of youth unemployment in 2013.

Many European and North American youth have given up dreams of pursuing professional and managerial careers. Analysts continue to refer to a "lost generation" of young people, fearing that even when prosperity returns, it will be younger cohorts who benefit the most, not those who missed out on opportunities for human capital development and career mobility in the years immediately after completing their formal educations. Economists and sociologists worry about so-called "NEETs," those young people who are not in employment, education, or training, and, as a result, not investing in their human capital. It is estimated that these youth encompass 14 million young Europeans (Alderman, 2013). In the United States, by the end of 2010 the employment to population ratio among youth aged 16-29 was at its lowest point since World War II, 55% (Children's Defense Fund, 2011). As a result of their precarious position in the labor market, many young adults have experienced increases in living at home with their parents, and declines in marriage and birth rates (Sobotka, Skirbekk, & Philipov, 2011; Newman, 2012).

This "Special Section" on "Youth, Economic Hardship, and the Worldwide 'Great Recession' grew out of an initiative begun by John Bynner, Glen Elder, and Walter Heinz in 2009 in the wake of the financial collapse and ensuing economic turmoil. The Youth in the Great Recession initiative (YGR) built on Glen Elder's monumental study of Children of the Great Depression (Elder, 1974; Elder & Rockwell, 1979), which demonstrated the long-term significance of depression hardship for children's socialization to work, their work value formation, and their future socio-economic careers. The leaders of the "Youth in the Great Recession Initiative" were surely prescient in envisioning the difficulties youth would face during, and following, this most recent worldwide economic cataclysm.

Whereas hard economic times pose difficulties for persons of all ages, youth who are entering the full-time labor force are particularly hard hit, as their inability to obtain stable remunerative employment lessens the likelihood of successfully completing normative early adult transitions, such as marriage, parenting, and independent residence. Plans were made for the initiative to consider both immediate and long-term effects. How might deterioration in their parents' economic circumstances affect young people's orientations to their futures and capacity to undertake a successful transition from school to work? Might ever more youth be mired in persistent poverty?

Would the uncertainty posed by unstable labor market opportunities lead youth to postpone transitions to adulthood, and to be more risk-averse generally? Or might the same conditions promote a more proactive, independent, entrepreneurial, and creative approach to life situations and opportunities?

The founders of the YGR recognized the need for research to fully understand the consequences of contemporary economic events in diverse societal contexts. They envisioned a tri-nation study of the impacts of the recession on youth in the United States, Germany, and Great Britain. The worldwide scope of the "Great Recession" enables comparison of differences in the impacts of economic hardship on families and individuals, across nations characterized by different institutional structures that could render young people more or less vulnerable. Given the structural differences across these countries - in the structure of educational and vocational qualifications, the school-to-work transition, the provision of societal safety net protection, and cultural values - a comparative study could reveal what difference the socio-cultural context makes for youth's successful transition to adulthood in unfavorable economic times.

Meetings in London and Munich were held in the Spring of 2010 to discuss the consequences of economic turmoil for young people in distinct social settings and to consider strategies to obtain the resources to support future collaborative work. These meetings were followed in May 2011 by a conference organized by Jacquelynne Eccles at the University of Michigan, and supported by the Society for Research on Child Development. The inter-disciplinary consortium of scholars assembled in Ann Arbor included psychologists, sociologists, demographers, economists, and policy analysts. The intent was to examine the impacts of the 'Great Recession' on youth themselves as they navigated the transition, as well as the more indirect consequences for young people that operated through the "linked lives" (Elder, Johnson, & Crosnoe, 2003) of parents and children. That is, parents' economic circumstances could have lasting consequences for children, adolescents, and older youth as they formed their aspirations and plans for the future and attempted to progress in their pathways to adulthood.

The participants at the Ann Arbor meeting were invited to share their ongoing research, as well as to explore the potentials of the data sets they were working with for cross-national comparison. A set of complementary collaborative projects was envisioned, some involving national longitudinal data sets. One of these would comprise the Panel Study of Income Dynamics in the United States, the German Socio-Economic Panel, and the British Household Panel Study, enabling comparisons of the timing of key transitions (completing school, acquisition of full-time work, marriage and cohabitation, and child-bearing) across countries. Other scholars would focus on single regional or local data resources, enabling a closer and more in-depth assessment of developmental processes. The participants left the conference with resolve to continue investigating youth outcomes in the aftermath of the Great Recession, to acquire funding for future research endeavors, to initiate collaborative studies, to heighten awareness of the plight of young people in recessionary times, and to stimulate additional research by highlighting the work of the YGR Initiative at future scholarly meetings.

To this end, I organized two sessions at multi-disciplinary international conferences that featured the work of scholars affiliated with the Initiative--at the Biennial Meeting of the Society for Research on Adolescence in March 2012 in Vancouver, and at the Annual Meeting of the Society for Longitudinal and Life Course Studies in Paris in September 2012. Based on four papers presented at these meetings, I proposed a "Special Section" of *Longitudinal and Life Course Studies*, and invited two of the leaders of the

Youth in the Great Recession Initiative, Walter Heinz and Robert Crosnoe, to comment on them. The contributors to this Special Section represent scholars from all three countries targeted as the focus of the YGR: Germany, Great Britain, and the United States.

Three of the articles in this issue emphasize the "linked lives" of parents and children, how children are affected when families confront hard economic times. The first two (Mortimer, Zhang, Hussemann & Wu; Schoon) address processes of inter-generational transmission of attitudes and behaviors in the United States and England, respectively. The third (Groh-Samberg & Voges) assesses the impacts of parental support in protecting young adults in difficult economic times from experiencing poverty in Germany. The fourth article in this Special Section (Staff, Johnson, Patrick, & Schulenberg) examines the effects of recessionary times on young people directly, by describing the consequences of the Great Recession for the labor market opportunities of contemporary American teenagers. It reveals large cohort differences in the part-time employment of high school students, a highly formative experience in the preparation for adult work. Commentaries on the four articles are provided by Professors Heinz and Crosnoe. In the following paragraphs, I highlight key findings and integrative themes.

Mortimer, Zhang, Hussemann, and Wu (this issue) assess how parental financial hardship influenced children's orientations to their futures in the aftermath of the Great Recession (2009-2011) in the American Midwest. Drawing on data from 345 matched pairs of parents and children (age 11 and older) in the longitudinal Youth Development Study, they examine the effects of parental economic stress on children's educational aspirations and economic expectations. These orientations, which motivate agentic striving and goal attainment, have strong implications for children's future educational and occupational achievement as well as otherwise successful transitions to adulthood (Grabowski, Call, & Mortimer, 2001; Lee & Mortimer, 2009). The authors ask, do children's educational aspirations and confidence in their capacity to succeed in the economic realm diminish when their parents suffer economic strain? They also investigate whether the familial context of achievement affects children's response to the family's economic circumstances. Parental achievement orientations, measured in adolescence, and parental educational attainment are considered indicators of the family achievement climate, potential precursors of achievement orientations in the next generation, as well as moderators of the effects of financial hardship. Because the parents had been surveyed from the ages of 14 to 38, the investigators were also able to assess whether prior parental unemployment experience during the decade preceding the recession conditioned the effects of more recent economic hardship. Finally, the availability of longitudinal data from both parents and children enabled estimation of first difference models, controlling stable features of parents and children and strengthening causal inference.

Mortimer and her colleagues find evidence that the familial achievement context does moderate the children's response to the family's economic circumstances. Children's economic expectations rose with their parents' incomes, but high parental expectations, measured during the parents' adolescence, heightened the impact of change in household income on change in their children's anticipated economic prospects. Furthermore, high parental aspirations during adolescence protected children from diminished educational aspirations when parents experienced financial problems. Apparently, those factors that enhance feelings of confidence and promote high educational aspirations during adolescence have long-term consequences, buffering the impacts of economic losses in the next generation.

Moreover, when parental reports of financial problems increased, economic expectations declined among children of the least well-educated parents. When parents experienced unemployment during the ten years prior to the recent recession, children's educational aspirations declined as their families' household incomes diminished. While many children appeared to be quite resilient in the face of their parents' economic struggles, children whose parents had a history of employment instability and the least educational credentials, were apparently more vulnerable.

Ingrid Schoon (this issue), drawing on data from close to 10,000 participants in the Longitudinal Study of Young People in England (born in 1989-1990) also

examines the "linked lives" of parents and children in difficult economic times. She assesses the impacts of parental short-term and persistent worklessness on young adult children's educational achievement orientations, measured at age 16, and their experience of being NEET (not in education, employment or training) from the age of 16 to 20, after completing compulsory formal education. Parental temporary and persistent worklessness was measured just prior to the Great Recession (2004 to 2006); offspring NEET status was gauged during a five-year period including pre-recession, recession, and post-recession periods (2006 to 2010). Strikingly, this research shows that a substantial minority of children in England live in "workless" families - 14% either persistently or temporarily. It should be noted that this figure underestimates the true extent of children's exposure to unemployment. Excluded from the definition are families in which only one parent is unemployed in two-parent families, since for a family to be considered "workless", neither parent could have a job.

Like the research by Mortimer and her colleagues, Schoon's study demonstrates that parental economic fortunes have significant effects on offspring achievement orientations. She shows strong associations between parental worklessness, on the one hand, and children's achievement orientations at age 16 and months of NEET status, on the other. That is, both sons and daughters had lower educational aspirations and plans and experienced more months in NEET if their parents were either temporarily or persistently workless during their teen years. Interestingly, however, the associations between parental worklessness and these outcomes diminished considerably when other risk factors facing families were included in the models. For example, low parental education, living in a rental unit (rather than owning one's home) and neighborhood deprivation increased time spent as NEET for both males and females. In contrast, the child's earlier academic performance (age 11) in math, English and science and the child's educational aspirations and intentions to attend University (at age 16) significantly reduced the risk of NEET. These findings suggest that parents who experience unemployment are also likely to reside in neighborhoods lacking employment opportunities and other positive influences on school-leavers. Their children have low levels of educational attainment early on, and have low educational aspirations. Importantly, the child's achievement orientation moderated the effects of parental worklessness on months of NEET; children with high achievement orientations in persistently workless households had particularly low levels of NEET. Schoon's research highlights the importance of the social context in increasing the risk of NEET, and the child's own achievement orientations as protective.

Olaf Groh-Samberg and Wolfgang Voges (this issue) use matched parent and adult child data from close to 35,000 participants in the German Socio-Economic Panel Study (SOEP), surveyed well before (1984) and through the aftermath (2011) of the Great Recession. Their focus is on youth poverty, which increased substantially from 1995 to 2005, but leveled off in the most recent period from 2005 to 2011 despite the "Great Recession." They note that German youth have been protected from high unemployment rates by the dual education-employment system. Still, long-term changes in patterns of transition to adulthood and in the labor market have increased youth vulnerability to poverty, as young people take longer to complete their educations and to form independent households with the potential for two earners.

But like the articles by Mortimer et al. and by Schoon, Groh-Samberg and Voges highlight the importance of the social context in moderating the effects of economic decline on young people. They highlight the differential potential for inter-generational support in higher- and lower-income families. They reason that official statistics overestimate youth poverty because high-income parents are likely to provide financial support for their transitioning children who no longer reside with them. The conventional measure defines poverty as household income divided by the number of residents (with adjustments for age) that is less than 60% of median national income. They show that if one assumes that incomes are shared across households (by calculating poverty on the basis of pooled incomes of parent and adult child households, divided by need or the number of residents in both households), the poverty rates of both 15-19 and 20-25 year-old youth diminish markedly. For example,

among 20-25 year olds, the official poverty rate is more than 50% for those with two parental participants in the SOEP; it falls dramatically to 11% when adjusted for parental income. Furthermore, the effects of transitions that are commonly thought to precipitate youth poverty, such as entering university, obtaining a precarious job, or becoming a parent, are greatly reduced.

Groh-Samberg and Voges recognize that their indicator of young adult income is likely to be overestimated, since it is probable that parents do not give as much to children living away as those residing under their own roofs. It is plausible to assume that normative ideas regarding young adult independence make large cash transfers uncomfortable for both generations (Swartz, 2009). Still, it is useful to highlight the potential for middle and upper class parents, in the context of hard economic times, to buffer the effects of transitions on their adult children's well-being through cash transfers (Swartz, et al., 2011).

Turning to the direct effects of the recession on youth, rather than those transmitted through parental hardship or financial support, Staff, Johnson, Patrick, and Schulenberg (this issue) examine the impacts of the Great Recession on student part-time employment in the United States. While the consequences of employment for such teenagers are the subject of much controversy (Staff, Mont'Alvao, and Mortimer, forthcoming), it is fairly well established that teenage employment can have multiple beneficial effects under the right conditions (e.g., limited working hours, good supervisory relationships, etc.). Early jobs can provide valuable socialization experiences that enhance vocational development and help to prepare youth for adult work (Mortimer, 2003). Utilizing Monitoring the Future's cohort-sequential design, the authors compare the experiences of 8th, 10th, and 12th graders in 2006-07, prior to the recession, in 2008-09, during the recession, and in 2010-11, following the recession. Merging samples across grade levels and years yielded a nationally representative sample of more than 200,000 students. While teenage employment has been declining since the 1980s, the authors show further substantial reductions during the "Great Recession," which continued in the post-recession period. Among 12th graders, who experienced the most substantial increases in worklessness, the proportion who were not employed increased from 27% in the pre-recession period to 40% in the post-recession period. A general withdrawal from employment was observed across age, gender, and parental education categories, and among students with high and low educational expectations. Suggesting the greater importance of lower employer demand than youth's declining interest in work, approximately 88% of non-working youth wished they had a job. Moreover, the fact that young people have become increasingly concentrated over time in "youth jobs" (babysitting, yardwork) rather than in clerical, sales, and office work, suggests increasing competition from adult workers.

Although increases in youth joblessness have increased across the board, the lowest rates, before, during, and following the recession were found among minorities - African Americans and Hispanics, rather than whites. The dearth of work among these young people is particularly ominous, for they are increasingly deprived of the opportunities for human capital development that come along with gainful employment.

Staff and his colleagues show that adolescent adaptation to family hardship in the Great Recession is unlikely to include gainful work that supplements family income. Elder emphasized in his path-breaking work that children during the Great Depression, particularly boys, could help their families at a time of economic crisis through their contributions to family income. Unlike countries, such as Germany, Austria, Denmark, and Switzerland, where combinations of schooling and working are coordinated and highly regulated by the apprenticeship system, it has been normative, throughout U.S. history, for teenagers to be employed part-time during the school year in free-market employment. In fact, contemporary cohorts of young people are much less likely than their parents or grandparents to have substantial work experience prior to entering the full-time labor force. Whereas Elder saw the benefits of working, in increasing youth confidence and work motivation, as a "silver lining" amidst Depression hardship, judging from the articles in this "Special Section", adolescents today are subject to considerable cost (in depressed aspirations and economic expectations, increased vulnerability to NEET, and risk of poverty) linked to

their families' economic hardship, but at the same time contemporary youth are deprived of a major coping resource in addressing their families' plight.

Taken in tandem, these studies highlight the complexity of social causation. As Schoon points out, a developmental contextual perspective is sorely needed. Economic hardship at the societal level does not have uniform consequences, irrespective of the social context in which it occurs. The attributes of the family and the youth labor force are crucially important. The family's level of vulnerability, as indicated by prior parental unemployment, low parental educational credentials, and a negative climate for achievement, influences children's reactions to economic stress (Mortimer, et al., this issue). Familial worklessness is likely to be accompanied by low parental education, living in rental units, and neighborhood conditions that heighten deprivation; these fully mediate the effects of parents' worklessness on children's experience of NEET (Schoon, this issue). The economic hardship experienced by children who are making transitions to independent living, higher education, and precarious work are likely to be considerably buffered by their families' level of affluence (Groh-Samberg & Voges, this issue). Finally, contemporary children whose parents suffer job loss may be particularly disadvantaged, in comparison with prior cohorts, because they are not able to find gainful work (Staff, et al., this issue). Hopefully, the articles in this Special Section will encourage other researchers to mine their longitudinal and comparative data sets, so as to further understanding of the consequences of recessionary times in varying historical, societal and familial contexts.

References

Alderman, L. (2013). *Young and skilled, a generation stagnates in Europe's job crisis*. New York Times, November 15, 2013. http://www.nytimes.com/2013/11/16/world/europe/youth-unemployement-in-europe.html?_r=0 retrieved November 26, 2013.

Children's Defense Fund. (2011*). The deterioration in the labor market fortunes of America's Young Adults during the lost decade of 2000-2011*. CDF Policy Brief #2. September 2011. http://www.childrensdefense.org/child-research-data-publications/the-deterioration-in-the.pdf retrieved December 2, 2013.

Crosnoe, R. (2014). Youth, economic hardship, and the worldwide Great Recession. *Longitudinal and Life Course Studies, 5*, 199-204. http://dx.doi.org/10.14301/llcs.v5i2.296

Elder, G. H. (1974). *Children of the great depression: Social change in life experiences*. Chicago, IL: University of Chicago Press.

Elder, G. H., Johnson, M., & Crosnoe, R. (2003). The emergence and development of life course theory. In J. T. Mortimer & M. J. Shanahan (Eds.), *Handbook of the Life Course* (pp. 3-19). New York, NY: Springer. http://dx.doi.org/10.1007/978-0-306-48247-2_1

Elder, G. H., & Rockwell, R. C. (1979). Economic depression and postwar opportunity in men's lives: A study of life patterns and health. In R. G. Simmons (Ed.), *Research in Community and Mental Health* (Vol. 1, pp. 249-303). Greenwich, CT: JAI Press.

Grabowski, L. S., Call, K.T., & Mortimer, J.T. (2001). Global and economic self-efficacy in the educational attainment process. *Social Psychology Quarterly 64*,164-179. http://dx.doi.org/10.2307/3090131

Groh-Samberg, O., & Voges, W. (2014). Precursors and consequences of youth poverty in Germany. *Longitudinal and Life Course Studies, 5*, 151-172. http://dx.doi.org/10.14301/llcs.v5i2.281

Heinz, W. R. (2014). Did the Great Recession affect young people's aspirations and reinforce social inequality? *Longitudinal and Life Course Studies, 5,* 189-198. http://dx.doi.org/10.14301/llcs.v5i2.288

Lee, J. C., & Mortimer, J.T. (2009). Family socialization, economic self-efficacy, and the attainment of financial independence in early adulthood. *Longitudinal and Life Course Studies, 1*, 45-62.

Mortimer, J. T. (2003). *Working and growing up in America.* Cambridge, MA: Harvard University Press.

Mortimer, J.T., Zhang, L., Hussemann, J., & Wu, C-Y. (2014). Parental economic hardship and children's achievement orientations. *Longitudinal and Life Course Studies, 5*, 105-128. http://dx.doi.org/10.14301/llcs.v5i2.271

Newman, K. (2012). *The accordion family. Boomerang kids, anxious parents, and the private toll of competition*. Boston, MA: Beacon Press.

Schoon, I. (2014). Parental worklessness and the experience of NEET among their offspring. Evidence from the Longitudinal Study of Young People in England (LSYPE). *Longitudinal and Life Course Studies, 5*, 129-150. http://dx.doi.org/10.14301/llcs.v5i2.279

Sobotka, T., Skirbekk, V., & Philipov, D. (2011). Economic recession and fertility in the developed world. *Population and Development Revie, 37*, 267-306. http://dx.doi.org/10.1111/j.1728-4457.2011.00411.x

Staff, J., Johnson, M.K., Patrick, M.E., & Schulenberg, J. E. (2014). When Teenage Work Disappears. *Longitudinal and Life Course Studies, 5*, 173-188. http://dx.doi.org/10.14301/llcs.v5i2.275

Staff, J., Mont'Alvao, A., & Mortimer, J. T. (Forthcoming). Children at work. In M. Bornstein & T. Leventhal (Eds.), *Handbook of child psychology and developmental science, Volume 4: Ecological settings and processes in developmental systems*. New York: Wiley.

Swartz, T. T. (2009). Intergenerational relations in adulthood: Patterns, variations, and implications in the contemporary United States. *Annual Review of Sociolog, 35*, 191-212. http://dx.doi.org/10.1146/annurev.soc.34.040507.134615

Swartz, T. T., Kim, M., Uno, M., Mortimer, J.T., & O'Brien, K. B. (2011). Safety Nets and Scaffolds: Parental support in the transition to adulthood. *Journal of Marriage and Family, 73*, 414-429. http://dx.doi.org/10.1111/j.1741-3737.2010.00815.x

Longitudinal and Life Course Studies 2014 Volume 5 Issue 2 Pp 105 – 128 *ISSN 1757-9597*

Parental economic hardship and children's achievement orientations

Jeylan T. Mortimer - University of Minnesota
morti002@umn.edu
Lei Zhang - University of Minnesota
Jeanette Hussemann - Urban Institute, Washington DC
Chen-Yu Wu - University of Minnesota

(Received September 2013 Revised February 2014) http://dx.doi.org/10.14301/llcs.v5i2.271

Abstract

While children's orientations to achievement are strong predictors of attainments, little is known about how parental economic hardship during recessionary times influences children's orientations to their futures. The Youth Development Study has followed a community sample of young people in St Paul, Minnesota, from mid-adolescence through their mid-thirties with near-annual surveys, and has recently begun surveying the children of this cohort. Using linked parent and child data, the present study examines the relationship between parental economic hardship and children's achievement orientations in the aftermath of the recent "Great Recession." Initial OLS analyses draw on 345 parent-child pairs, with data collected from parents during their adolescence, during the decade prior to the recession, and in 2011, and from their children (age 11 and older) in 2011. Then, first difference models are estimated, based on a smaller sample (N=186) of parents and children who completed surveys in both 2009 and 2011. Our findings indicate that when families are more vulnerable, as a result of low parental education and prior parental unemployment experience, children's achievement orientations are more strongly threatened by the family's economic circumstances. For example, as parental financial problems increased, economic expectations declined only among children of the least well-educated parents. Low household incomes diminished educational aspirations only when parents experienced unemployment during the ten years prior to the recent recession. Parental achievement orientations, as adolescents, were also found to moderate the impacts of shifts in the family's economic circumstances. Finally, boys reacted more strongly to their parents' hardship than girls.

Keywords: economic hardship, Great Recession, parental unemployment, economic expectations, educational aspirations, adolescent vocational development

Introduction

Parents' fortunes rise and fall, especially in turbulent economic times. With income losses and uncertainty in income flows, and mounting financial stressors, children may observe their parents struggling to make ends meet to preserve a threatened standard of living. This research examines the linkages between key indicators of parental economic well-being and children's achievement orientations, in a community sample surveyed in 2009 and 2011. The recent recession in the United States that began in December 2007 produced high unemployment rates, hovering around 9 to 10

percent, and median household income decreased by 10 percent. Although the recession was officially over in June 2009 (National Bureau of Economic Research, 2013), many families have continued to experience unemployment and reduced work hours. Except for those in the very highest income brackets, household incomes have not recovered. The present study captures this post-recession period of continued economic turmoil.

Although much attention in times of economic hardship is directed toward the problems of adult workers, little is known about the potential consequences of recessionary times for children's developing outlooks toward the future. Most research focuses on children's academic achievement, finding strong socio-economic gradients (Duncan & Murnane, 2011; Ermisch, Jantti, & Smeeding, 2012). Drawing on longitudinal data, we asked three research questions. First, to what extent were parental financial problems and household income associated with children's expectations about success in the economic realm and their educational aspirations in 2011? Second, did change in the family's economic standing between 2009 and 2011 have measurable impacts on change in children's economic expectations and educational aspirations? Finally, were family economic difficulties buffered by, or contingent upon, the family's circumstances and resources, including the parent's history of unemployment, the familial context of achievement as defined by earlier parental achievement orientations and parental educational attainment, or the child's age and gender?

The family and children's achievement orientations

The importance of children's achievement orientations for their adult attainments is well recognized. According to the classic status attainment model (Sewell & Hauser, 1975, 1980), parents of higher socio-economic status have higher expectations for their children, which lead them to encourage their children to have high educational and occupational aspirations. Children's aspirations thereby become powerful mediators of the effects of socio-economic status on offspring attainments. Predictions derived from this social psychological model of status attainment have been confirmed in research extending across several decades (Davies & Kandel, 1981; Hauser, Tsai, & Sewell, 1983; Kerckhoff, 1995; Sewell & Hauser, 1976; Sewell & Shah, 1968; Sewell, Haller, & Portes, 1969; Sewell, Haller, & Ohlendorf, 1970; Schoon, this issue). Although adolescents' aspirations and plans have risen greatly in recent cohorts (Reynolds, Steward, MacDonald, & Sischo, 2006; Schoon, 2010), they continue to predict long-term educational and occupational attainments (Ashby & Schoon, 2010; Beal & Crockett, 2010; Farkas, 2011; Jacob & Linkow, 2011; Reynolds & Johnson, 2011).

However, aspirations are not the only psychological orientations that may be linked to future attainments (Mortimer, 1994, 1996). In this study we also examine expectations about the likelihood of success in the economic realm. Some youth are optimistic that they will do well in this sphere, while others may not be so sure. Similarly, Bandura's conceptualization of self-efficacy (1977, 1997) highlights beliefs about the likelihood of achieving one's goals. In Bandura's words, "Self-efficacy is concerned with judgments about how well one can organize and execute courses of action required to deal with prospective situations containing many ambiguous, unpredictable, and often stressful elements" (1982: p. 23). Individuals with a stronger sense of self-efficacy set higher goals and exert more effort towards their achievement in the face of obstacles. In one study (Grabowski, Call, & Mortimer, 2001), adolescents who thought that they would be more economically successful in the future were more likely to take concrete steps to go to college and to achieve high grade point averages. Adolescents' economic expectations were also found to predict successful transitions to adulthood, including young adult educational and income attainments, and the avoidance of early parenting (Lee & Mortimer, 2009).

Given the significance of children's psychological orientations for their future attainments, it is important to understand where these attitudes come from. Vocational development begins in the family, as parents communicate their orientations toward work and their aspirations for their children to the next generation (Mortimer, 1974, 1975, 1976; Mortimer & Kumka, 1982; Porfeli & Vondracek, 2007; Ryu and Mortimer, 1996; Schulenberg, Vondracek, & Crouter,

1984; Vondracek et al., 1986). In fact, the parental workplace is probably one of the most critical mesosystem environments (Bronfenbrenner, 1979) influencing children's orientations to the future and their vocational development (Kohn, 1969; Kohn and Schooler, 1983; Vondracek, Lerner, & Schulenberg, 1986).

While prior work emphasizes the effects of educational aspirations on attainments, aspirations are known to be reflective of the child's academic performance (Reynolds & Johnson, 2011) and extra-curricular activities (Beal & Crockett, 2010). Children's evaluations of the likelihood of their future economic success could also reflect their prior successes and achievements in school and in work, significant others' reflected appraisals and encouragement, and the presence of successful role models.

In this study we focus on household income and financial strain in the family of origin as potential contributors to children's developing achievement orientations. Elder's "Principle of Linked Lives" (Elder & Shanahan, 2006; Elder, Johnson, & Crosnoe, 2003) and his classic study of *Children of the Great Depression* (1974) indicate that the hard economic times experienced by parents have profound effects on their children's development and attainment. A large body of research has focused on the consequences of income inequality, low income, and poverty on children's cognitive ability (Kainz, Willoughby, Vernon-Feagans, & Burchinal, 2012; Reardon, 2011; Yeung, Linver, & Brooks-Gunn., 2002), school dropout, educational attainment (Mayer, 2001), labor force participation, and wages. Researchers have also linked parental financial losses and strain, spousal discord, and parents' strict and erratic disciplinary practices to children's mental health and behavioral problems (Conger, Ge, Elder, Lorenz, & Simons, 1994; Kainz et al., 2012; Newman, 1988; Walper & Silbereisen, 1994; Yeung et al., 2002). Although these connections are critical to understanding family processes and child development in the face of economic loss, little is known about how parental economic hardship during the recent recession has influenced children's orientations to their own futures.

In recognition of the complexity of inter-generational transmission and family processes, we examine three categories of potential moderators of the effects of parental hardship on children's orientations: first, the stability of the parental work career, as indicated by unemployment; second, the familial context of achievement, including earlier parental aspirations and economic expectations, and parental educational attainment; and finally, key attributes of the children, including age and gender. Let us consider each one of these in turn.

First, family economic histories may provide interpretive contexts for more immediate experiences. In addition to their direct consequences for children's orientations toward their futures (Schoon, this issue), parents' long-term economic successes and failures could condition the effects of more recent parental experiences in the labor force. At the individual level, developmental growth often follows from adaptive responses to stressful situations; successfully coping with challenges can engender new skills and ways of thinking that enhance resiliency in future similar situations. Shanahan and Mortimer (1996) referred to these situations as eustressful, promoting positive consequences. In contrast, distress and its negative sequelae for mental health are likely to follow from stressors that over-reach the individual's coping abilities (see also Stein, Hoffmann, Bonar, Leith, Abraham, et al., 2013).

Similar processes may be observed at the family level. On the one hand, families that have experienced multiple spells of joblessness over a long period of time could develop coping mechanisms to adapt to such situations; in response to early shocks, the family could have learned how to obtain other sources of income, goods and services, as well as social support (Iverson, Napolitano, & Furstenberg, 2011). Efforts to "cut back" could have become routinized and reductions to living standards minimized. If such adaptive strategies were readily enlisted each time the parent suffered a new set of drawbacks, there could be few deleterious effects of these experiences on children.

It is also plausible, however, that earlier economic problems, especially if their repercussions were traumatic, could "sensitize" both parents and children to economic decline, reducing thresholds of vulnerability (Shanahan & Mortimer, 1996). The family's inability to adequately cope with economic

hardship in prior years might have precipitated declines in parental efficacy and mental health (Conger et al., 1994), which reduce adequate coping in similar situations. In this case, earlier bouts of unemployment could exacerbate the effects of current hardships on children's orientations to the future (Prawitz, Kalkowski, & Cohart, 2013). A third possibility is that the family's economic history does not matter; instead, only the immediate economic circumstances of the family influence children's achievement-related orientations. In our research, we empirically estimated the impacts of the parent's long-term unemployment history and current economic circumstances.

Second, we investigate the possible conditioning effects of the familial context of achievement, considering parental traits that may be highly durable. That is, we assess whether the parent's own achievement orientations to the future, measured in adolescence, have long-term implications for their children. Much research in the status attainment tradition has shown that parents' *contemporaneous* expectations for their children's educational attainment have strong effects on children's actual educational achievement and adult socio-economic attainment (for a summary, see Kerckhoff, 1995). However, parents' earlier expectations regarding their own futures during adolescence, could have influenced their own achievements and could also be reflected in their expectations, as adults, for their children. To the extent that parental achievement orientations are long-term stable traits, affecting confidence in the face of adversity, they could be communicated to the child and potentially buffer the effects of financial hardships on children.

Moreover, since parental education is a key indicator of family socio-economic status, which has strong implications for parental orientations toward their children's achievement, it may also function to condition the effects of economic hardship. Elder (1974), in *Children of the Great Depression*, noted that the status losses of formerly middle-class parents led them to experience greater mental anguish than working-class parents. It is likely that highly educated contemporary parents, with their emphasis on the "concerted cultivation" (Lareau, 2002, 2003; Reardon, 2011) of children's development and socio-economic attainment, would continue to encourage their children's achievement despite economic hardships.

Finally, we examine whether the child's age or the child's gender buffer the effects of family hardship on children's achievement orientations. While longitudinal studies indicate that gaps in educational achievement by family income remain quite stable as children age (Reardon, 2011), children's achievement orientations may reflect their families' economic problems to a greater or lesser extent, depending on their age. Elder and Rockwell (1979) found that the young children in the Berkeley cohort were more vulnerable during the Great Depression, as they had little understanding of the reasons for their parents' upset, and they could do nothing to help their parents at this time of crisis. Older children in the Oakland cohort, who experienced the Depression as teenagers, could understand that their parents were affected by a broad nation-wide economic crisis, and they could help their parents through their odd jobs and contributions to household work. Elder interpreted their longer-term positive outcomes as attributable to their experiences of successful coping. Analyses of more recent data from the Panel Study of Income Dynamics show that low family income experienced in early childhood (birth to age 5) has more detrimental effects on life chances (as indicated by years of completed schooling and high school graduation) than poverty experienced at older ages (Duncan, Brooks-Gunn, Yeung, & Smith, 1998). However, in a study in New York state, Halpern-Felsher, et al. (1997) assessed children and adolescents' educational risk (as measured by an index reflecting standardized achievement test scores, school attendance, suspension and other problems), comparing those who were eligible for free or reduced lunch programs with those who were not. While family economic risk had no significant effects on educational risk among those in middle childhood (mean age 9.8); with the exception of African-American males, it increased educational risk among adolescents (mean age 15.6). Given these mixed findings, our assessment of the moderating effects of child age is exploratory.

Although most young people aspire to work as adults, and boys and girls assign commensurate importance to their future occupational careers (Johnson & Mortimer 2000), gender differences in educational attainment, labor force participation, and earnings persist. Young adult women in the United States have now surpassed men in their educational

achievement (Institute of Education Sciences, 2011), but young women's earnings continue to lag behind men's at every level of educational attainment (U.S. Bureau of the Census, 2011). Since normative expectations still confer main breadwinner status on men (Johnson, Oesterle, & Mortimer, 2001), boys may be more sensitive than girls to parents' setbacks and successes in the world of work, and therefore more responsive to their parents' successes and failures. Consistent with this expectation, Schoon and her colleagues (Schoon, Martin & Ross, 2007) reported that 16 year-old males were more susceptible to their parents' economic hardship than females (see also, Schoon, this issue). Their study of two nationally representative British birth cohorts (1958 and 1970) indicated that parental economic hardship diminished job aspirations among teenage sons, but not daughters. Similarly, Rutter (1970) reported greater child responsiveness to marital discord and family disruption, common responses to economic stress, among males than females.

In view of the extensive literature on parental success and children's achievement orientations, our study was guided by four hypotheses. The first hypothesis posits direct effects; the remainder reference moderating influences.

I. Children's economic expectations and educational aspirations will reflect recent and past parental economic hardship, controlling parental orientations to achievement, parental education, and the child's age and gender.

II. The parent's prior history of unemployment will moderate the effects of parents' current economic well-being on children's achievement-related orientations. With little prior research, and plausible reasons to expect "inoculating" as well as "sensitizing" effects of prior hardship, our assessment of the contingent effects of parental unemployment history is exploratory.

III. A positive familial context of achievement, as indicated by the parents' orientations to achievement when they were adolescents and the parents' educational attainment, will reduce the effects of economic hardship.

IV. Parental economic standing will have more deleterious effects for boys than girls.

Methods

Data source

The data were obtained from the longitudinal Youth Development Study, which has followed a panel of 1,139 randomly chosen teenagers since 1988 when they were in the 9th grade in the St. Paul Minnesota Public Schools and mostly 14-15 years old (Mortimer, 2003). Nineteen near-annual surveys have been obtained from the participants, first administered in their high school classrooms, and subsequently by mail, through 2011, when the respondents were 37 and 38 years old. Panel retention in recent years, at about 67 percent of the original cohort, was not associated with numerous indicators of socio-economic origin, achievement-related orientations measured in adolescence, extrinsic and intrinsic work values, behavioral problems and mental health. However, men and non-whites have had a higher risk of survey attrition than women and whites.

In 2008, we began to recruit the children of this cohort, targeting those who were age 11 and older (Hussemann, Mortimer, & Zhang, 2011). The first data collection (a mailed survey) from children occurred in 2009, with 277 responding. We continued recruiting children for waves 2 and 3 of the child study (again targeting those children who turned 11, as well as older children who had not joined the study previously); by 2011, 67 percent of the eligible parents had allowed their children to participate. Mothers were more likely to consent than fathers, parental education was positively related to consent, and parents were more likely to allow their biological children to participate than stepchildren or adopted children. Parental marital status (single, cohabiting, married), household income, and parental financial problems were not significantly related to the consent decision.

By 2011 (Wave 3 of the child study), 449 children had been recruited, of whom 345 completed Wave 3 surveys. To maximize sample size, our initial analyses draw on child orientations measured in 2011. We then estimated first difference models that utilized data obtained from 186 children and their parents who completed surveys in both 2009 and 2011 (excluding children who did not age into the sample until after 2009, as well as those not participating in

one wave or the other). We used data from parents collected both contemporaneously and previously.

We do not claim that this sample is representative of children or families in the Twin Cities (St. Paul and Minneapolis) area; nor does it represent the larger Youth Development Study cohort from which it was drawn. This is because we recruited only children age 11 and older, whose mean age was 15.8 in 2011. Since parents were all about the same age, born in 1973 or 1974, parents of children of mean age (~16) in 2011 would have been in their early twenties at the time of the child's birth; parents of older children were even younger. Thus, as one might expect, our sample of parents has lower educational attainment and incomes than the panel as a whole, and is also disadvantaged in comparison to all families of approximately the same age in the Twin Cities. In Minneapolis and St. Paul, 49.6 percent of 35-40 year-olds had a Bachelor's degree or higher in 2011; in our sample of parents, only 21 percent had attained this level of education. While median household income in our sample of families was $65,000 in 2011, for 35-40 year olds in Minneapolis and St. Paul, median household income was $81,400 (authors' calculations based on the 2011 American Community Survey, Ruggles, et al. 2010).

To further contextualize this study, it should be recalled that these data were obtained in the years following the official "Great Recession." Because of the persistence of unemployment and other economic difficulties, this recession has had "a long tail," with many families continuing to experience hardship after its official end. In the Twin Cities Metropolitan Statistical Area, the unemployment rate in 2011 was 6.3 percent, lower than the peak rate of 7.9 percent in 2009, but still not down to the 4.4 percent unemployment rate experienced in 2007 (Bureau of Labor Statistics, 2013a, b, and c).

Measures

Children's achievement orientations in 2009 and 2011

Children's economic expectations were based on their responses to the question: "How do you see your future?" Three items followed: (1) "You will have a job that pays well?" (2) "You will be able to own your own home?" and (3) "You will have a job that you enjoy doing?" Response options ranged from (1) Very low to (5) Very high. We summed responses to the three questions to create unstandardized additive indices (Alpha=.824 in 2009; .840 in 2011). Elsewhere these questions have also been used to measure life course expectations or optimism about the future (Hitlin & Johnson, 2013). Children's educational aspiration was based on a single question: "What is the highest level [of education] that you plan to obtain in the future?" Responses ranged from (1) elementary or junior high school to (6) Ph.D. or professional degree.

Family economic indicators

Annual household income was calculated by taking the natural logarithm of income, as indicated by the response to the open-ended question, "What was the income for your entire household in 2010 before taxes?" The natural logarithm of annual household income for each year and differences between those two natural logarithms (in first difference models) were used to approximate the normality assumption of OLS.

An additive financial problems index (AFPI) was based on the sum of responses to three items: (1) "How much stress have you felt in meeting your financial obligations during this past year?"; (2) "How difficult is it for you to pay your bills on time? These bills might include insurance, rent, mortgages, car payments, credit cards, etc."; and (3) "How much burden do you feel from debt (from credit cards, mortgages, personal loan, etc.?)." Responses ranged from 1, "No burden (stress or difficulty) at all," to 7, "Extremely high burden (stress or difficulty)." (Alpha=.857 in 2009; .886 in 2011).

Parental unemployment history

Parents' unemployment history was based on an annual Life History Calendar, which recorded monthly employment status over the 11 years prior to the onset of the current recession, from January 1997 to December 2007. The average annual proportion of unemployed months was calculated as number of months unemployed/12, divided by the number of available years. (Since not all respondents completed surveys in every wave, the total available years can be less than 11.) In regressions, the continuous measure

of average annual proportion of unemployment is further grouped into three categories: zero unemployment experience over the entire period, approximately one month unemployment on average per year, and more than one month unemployment per year. Zero unemployment experience is the reference group under the dummy coding scheme.

Family context of achievement

The indicators of parental achievement orientations, measured when they were 15-16 years old, in the second year of high school, are identical to the children's measures of economic expectations and educational aspirations. Parents' educational attainment was grouped into three categories: (1) High school or less (the reference category); (2) Technical or vocational school, an Associates' degree, or some college; and (3) BA or above.

Child age and gender

Child age was measured in years, and gender was coded 1 if male.

Analytic strategy

We initially used Ordinary Least Squares regression to assess the effects of parental economic status on children's achievement-related outcomes in 2011. For each child outcome, economic expectations and educational aspirations, we examined the main effects of each contemporaneous economic status variable (additive financial problems index and the natural logarithm of annual household income) to assess their independent effects, net of the parent's achievement orientations in adolescence, parental education, and the child's age and gender. We assessed these variables one at a time, to take advantage of the full number of cases for which we have data (parents were more willing to divulge their financial problems than their household incomes). We then examined whether parental unemployment history, earlier parental orientations (observed in adolescence), parental educational attainment, child age, or child gender moderated the effects of the family economic status variables on children's outcomes, by introducing interaction terms and examining their effects one at a time. We examined all possible interactions between the two 2011 hardship indicators and parental unemployment history, parental achievement orientations, parental education, child age, and child gender; however, only statistically significant interactions are reported in the tables. In this way we highlight potentially important conditioning effects. Unstandardized regression coefficients are reported for the 2011 models.

In a second step, for each outcome in turn, we examined first-difference models in which both financial hardships and children's outcomes were expressed as the difference between respondents' 2011 and 2009 values (2011 minus 2009 measures). This allowed us to assess the impacts of *change* in economic hardship on *change* in children's orientations directly, and to examine how such impacts might be moderated by parental unemployment histories, earlier parental orientations, parental educational attainment, child gender, and child age. This strategy (the simplest case of the fixed effect model, see Allison, 2009, pp. 7-27; Wooldridge, 2002, pp. 279-291), controls the additive effects of time-invariant qualities of parents and children, which could influence parental economic hardship or the attitudes of the children. The first-difference models therefore offer the most stringent test of our hypotheses since time-stable characteristics of parents and children are effectively controlled. Like before, we generated unstandardized regression coefficients; only those interaction effects that were statistically significant are reported.

Because children are nested within families, they cannot be treated as independent observations; that is, clustering jeopardizes the assumption that regression error terms are independent of one another. Therefore, the significance levels of the regression coefficients were calculated with adjusted standard errors, using the "cluster" option in STATA's regression command. (For the formula for determining the robust cluster variance estimator, see Sribney, 2009; for further description of cluster-correlated robust variance estimates, see Froot, 1989; Rogers, 1993; Williams, 2000; and Wooldridge, 2002).

Findings

Descriptive statistics for the 2011 sample are reported in Table 1; changes in child economic expectations, aspirations, log household income, and the additive financial problems index from 2009 to 2011 are also shown. The children's 2011 economic expectations indicators are relatively high, with means about 4.0 (the maximum value was 5); the additive expectations index is also shown. Consistent with many other studies (e.g., Reynolds et al., 2006; Schoon, 2010), 2011 educational aspirations among the children were also quite high at 4.5 (approximating a Bachelor's degree). Mean household income, measured in 2011, was $60,990. The parents, on average, reported moderate levels of financial problems; the average value of this scale (range 3- 21) was about 13. In the eleven-year span from January 1997 to December 2007, parental unemployment on average was a little less than three weeks annually (e.g. 0.05 × 12 months × 31 days = ~ 19 days); 51 percent of parents had no unemployment experience from 1997 to 2007, 26 percent were unemployed one month, on average, per year, and 24 percent were unemployed more than one month, on average, per year.

The parental economic expectations index, measured during the parent's adolescence at age 15-16 (in year 1989), is just slightly lower than the same measure for children. Parental educational aspirations, as adolescents, were lower than their children's, approximating some college. The modal parental educational level, achieved by 57 percent of the parents, also approximated an Associate's degree, some college, or vocational/technical certification.

The mean child's age was 15.8 in 2011 and 45 percent were male.

Children's economic expectations

We first considered the children's economic expectations, the variable that might appear to be the most strongly affected by parental economic standing. Children's economic expectations reflect their perception that they themselves will be economically successful in the future. Table 2 presents OLS unstandardized coefficients for the 2011 models of children's expectations. It should be noted that the number of cases and clusters, or families, differs across models, because some parents and/or children did not answer all questions. For example, models including household income are based on fewer cases, since some parents did not report their incomes.

Model 1 in Table 2 shows that parents' financial problems had no significant main effect on child expectations; however, children's expectations rose with the natural logarithm of parental household income (Model 2; b=.345, p<.05). The parent's economic expectation, measured during adolescence, also had a significant positive effect on their children's expectation (Model 1; b=.145, p<.05), measured more than 20 years later. This positive effect suggests a process of inter-generational transmission. Such positive expectations may be considered a stable trait, manifest over a long period of time and transferred to children via a wide range of communications and cues. In Model 1, children whose parents were in the highest education bracket (BA or more) had significantly higher economic expectations than children whose parents were in the lowest reference category (high school or less). The effect of high parental education becomes insignificant, however, when household income is controlled (Model 2). Interestingly, children whose parents were in the intermediate educational category did not have higher expectations than the children in the lowest, least well-educated group in either specification. We found no significant interactions dependent on parental unemployment experience, earlier parental expectations, parental education, child's age or gender.

To investigate whether change in the family's economic circumstances led to change in children's expectations from 2009 to 2011, we estimated first-difference models, initially examining main effects (see Table 3, Models 1 and 2). The economic variables (change in log income, change in financial problems) were found to have no significant main effects. While first-difference models control the additive effects of variables that are constant across time, it is still possible that such constant variables could interact with changing characteristics to produce variant outcomes. We therefore assessed whether prior unemployment experience, earlier parental expectations, parental education, or child

Table 1. Descriptive Statistics

Variable	N*	Mean	S.D.	Min	Max
Child 2011					
Child Economic Expectation Index	325	12.07	2.28	4	15
Chances to have a job that pays well	325	3.98	0.83	1	5
Chances to have your own home	325	4.04	0.92	1	5
Chances to have a job that you enjoy	325	4.05	0.88	1	5
Child Educational Aspiration	314	4.47	1.21	2	6
Child Age	343	15.83	2.85	11	23
Child Gender (Male = 1)	344	0.45	0.50	0	1
Parent 2011					
Annual Household Income ($1000)	175	60.99	34.18	0.04	135
Log Annual Household Income	175	10.74	1.01	3.76	11.81
Parent's Education	208				
Less than or Equal to High School (ref)		0.22	0.41	0	1
Tech / Vocational school or Some college		0.57	0.50	0	1
B.A. degree or higher		0.22	0.41	0	1
Additive Financial Problems Index	208	12.82	5.13	3	21
Average Annual Proportion of Unemployment	231	0.05	0.10	0	0.64
Zero Unemployed Months		0.51	0.50	0	1
One month on average per year		0.26	0.44	0	1
> one month on average per year		0.24	0.43	0	1
Parent 1989 (in adolescence)					
Parent's Educational Aspiration in 1989	202	3.67	1.28	1	6
Parent's Economic Expectation Index in 1989	225	11.71	2.43	3.96	15.44
Chances to have a job that pays well	225	3.71	0.83	1	5
Chances to have your own home	225	3.70	1.01	1	5
Chances to have a job that you enjoy	225	4.02	0.84	1	4
Changes between 2009 and 2011					
Child 2011-2009					
Economic Expectation	162	0.08	2.39	-9	12
Educational Aspirations	160	0.05	1.42	-4	5
Parent 2011-2009					
Log Annual Household Income	107	0.002	0.96	-7.06	2.64
Additive Financial Problems Index	136	0.46	4.08	-9	14

** N's for G1/G2 are counts of unique parents/ families and N's for G3 are counts of unique G3 children.*

Table 2. OLS Models for 2011 Child Economic Expectation

Economic Expectation	1	2
Child's Age	-0.071	-0.037
	(0.043)	(0.045)
Child Gender (Male=1)	-0.196	-0.175
	(0.270)	(0.285)
Parent's Economic Expectation (1989)	0.145*	0.110*
	(0.057)	(0.051)
Tech/vocational/some college	0.384	0.385
	(0.372)	(0.428)
B.A. And above	0.862*	0.650
	(0.408)	(0.474)
Additive Financial Problems Index	0.005	
	(0.026)	
Log Annual Household Income		0.345*
		(0.160)
Constant	11.160***	7.524***
	(0.960)	(1.990)
N	289	248
N-families	192	162
R-square	0.069	0.079

** p<0.05, ** p<0.01, *** p<0.001*

age and gender, moderated the effects of the two economic change indicators.

We observed two significant interactions. First, parental economic expectations, observed during the parents' adolescence, conditioned the effect of change in household income between 2009 and 2011. The significant coefficient for the difference in log annual household income in Table 3 Model 3 indicates that children's economic expectations declined somewhat as parental incomes rose, when parents had the lowest economic expectations (b=-1.779, p<.05). The significant coefficient for the interaction term (b=.194, p<.01) indicates that with increases in parental economic expectations, increases in parental income have salutary effects on children's economic efficacy. Thus, an increase from a parental expectations score of 4, the lowest, to 15, the highest, would yield a positive effect of each unit increase in log household income on child expectations (-1.779 + [11 x .194] = .355). To depict this interaction more intuitively, Figure 1 shows differences in the effects of change in household income for children whose parents' economic expectations, as adolescents, were above and below the median. It is evident that increases in household income only strengthen children's economic expectations when the parents themselves had relatively high expectations (above the median) as adolescents. Perhaps high expectations reflect the parent's perception of self as an agentic and effective economic actor---leading parents to attribute their economic successes (and failures) to their own

Table 3. First-difference Models for Economic Expectation

Diff. in Economic Expectation	1	2	3	4
Diff. log annual household income	0.245		-1.779*	
	(0.128)		(0.679)	
Diff. additive financial problems index		-0.006		-0.226**
		(0.045)		(0.084)
Parent's Economic Expectation (1989)			0.035	0.021
			(0.058)	(0.061)
Tech/vocational/some college				-0.050
				(0.413)
B.A. and above				0.123
				(0.595)
Tech/vocational/some college × Diff. AFPI				0.312**
				(0.096)
B.A. and above × Diff. AFPI				0.223
				(0.120)
Parent's Economic Expectation (1989) × Diff. log household income			0.194**	
			(0.066)	
Constant	0.021	0.084	-0.370	-0.089
	(0.209)	(0.182)	(0.679)	(0.784)
N	124	162	120	157
N-families	96	124	93	120
R-square	0.014	0	0.027	0.056

** p<0.05, ** p<0.01, *** p<0.001*

abilities and effort---and to communicate these interpretations to their children. Conversely, if the family's economic welfare declines despite relatively high levels of parental expectations about the future, children's confidence in their own capacity to achieve economic goals in adulthood may erode. In this case, we conclude that high parental economic expectations, sensitize the child to the effects of rising (or falling) incomes.

Second, parental education moderated the effect of change in parental financial problems on children's expectations. In the specification for Table 3 Model 4, the coefficient for change in financial problems (b=-.226, p<.01) indicates that increasing financial problems have a negative effect on expectations among children of the least well- educated parents (the reference group). The coefficient for the interaction of the intermediate level of education (technical, vocational, some college) with change in the financial problems index, which is positive (b=.312, p<.01), indicates the difference between the effect for this group and the reference group. Thus, a one-unit increase in parental financial problems leads to a small increase of -.226 + .312 = .086 in the child's economic expectation, if parents had the intermediate level of educational attainment. As shown in Figure 2, as parental financial problems increase, children of the least well-educated parents show a sharp decline in expectations. The slightly upward slope for children whose parents have intermediate levels of education indicates that their expectation increases as parents grapple with financial stresses. Children of the most highly educated parents (with BA degrees and above) show virtually no change in economic expectations despite increasing parental financial problems. No other significant interaction effects were observed.

Figure 1 Change in Log Annual Household Income and Change in Child Economic Expectation, Interacting with Parental Economic Expectation

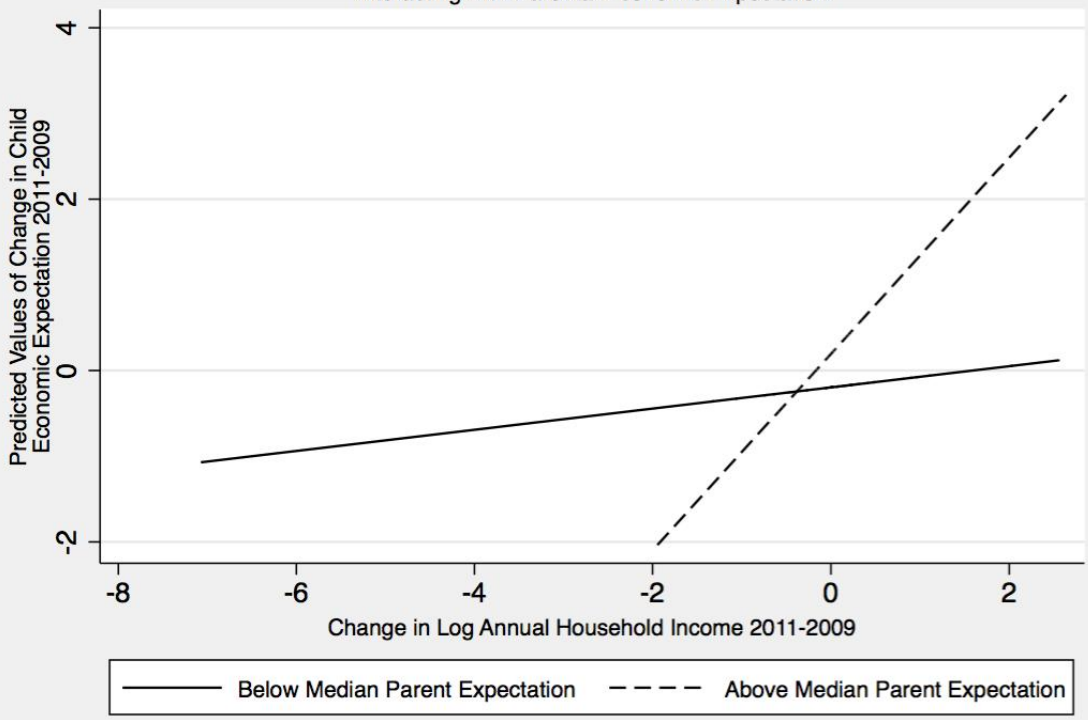
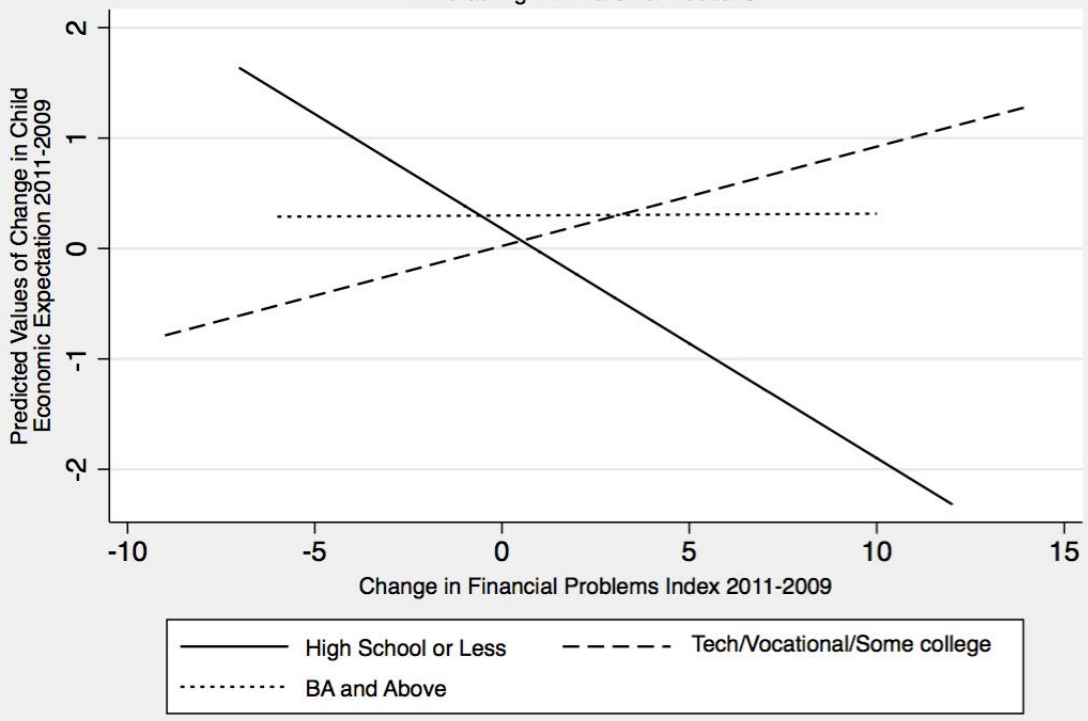


Figure 2 Change in Financial Problems Index and Change in Child Economic Expectation, Interacting with Parental Education



Children's Educational Aspirations.

Models 1 and 2 in Table 4 show that neither the parental financial problems index, nor household income, have significant effects on children's educational aspirations. Unlike parental economic expectations, parental educational aspirations, measured during adolescence, did not significantly predict the child's aspiration in 2011. Consistent with decades of research on children's aspirations (see also Schoon, this issue), children whose parents had a Bachelor's degree or more had higher educational aspirations than children whose parents had no post-secondary educations. Aspirations decline with age, and boys have lower educational aspirations than girls.

We find three significant interactions. First, we found evidence that the parent's unemployment history sensitized the child to economic conditions in the household (see Table 4, Model 3). The log of household income had no significant effect on the educational aspirations of children whose parents experienced no unemployment from 1997 to 2007 (b=-.180, n.s.). Increase in log household income had a positive effect on aspirations among those whose parents suffered relatively little unemployment during the decade prior to the recession (-.180+.334=.154). The results indicate that the parent's smooth employment history protects the child's educational aspirations when household incomes are low. In contrast, the positive coefficients for the children of those parents who suffered unemployment (non-significant, however, for the children of parents who suffered more than one month of unemployment per year) suggest that aspirations rise (or fall) with shifts in parental economic fortunes.

Figure 3 illustrates the interaction between unemployment experience and the natural logarithm of 2011 income. The solid line, representing the impacts of household income on aspirations for children of parents without any unemployment, slopes downward (a non-significant trend, as shown in Table 4), while the dashed and dotted lines for parents with unemployment experience have positive slopes. This pattern suggests that prior sporadic unemployment experience increases the child's responsiveness to income differences, as aspirations rise as household income increases (or fall as income declines) only among children whose families may have become "sensitized" to economic hardship and economic betterment.

Second, although parental educational aspiration in adolescence had no significant additive effect (Table 4, Model 1), it moderated the effect of parental financial problems (Model 4). The coefficient for the financial problems index, -.094 ($p<.05$) in Model 4, may be interpreted as the effect of financial problems for children whose parents had the lowest educational aspirations in adolescence. The effect of financial problems becomes less negative as earlier parental educational aspirations increase. To illustrate this effect more concretely, Figure 4 shows differences in the effects of financial problems for the children of parents who aspired to a BA or more during adolescence, and those whose parents aspired to less than a BA. As shown in Figure 4, when financial problems rise, there is a steep decline in children's aspirations for children whose parents aspired to less than a BA. In contrast, when parents had high aspirations as adolescents, their children's aspirations are relatively impervious to parents' increasing financial difficulties. High parental aspirations, early on, thus appear to be protective for their children.

Finally, child gender conditions the impacts of parental financial problems (Table 4, Model 5); while parents' financial problems had no significant impact on girls' aspirations (b=.037, n.s.), the difference in the effect of financial problems for boys and girls was statistically significant and negative (b=-.066, $p<.05$). Thus, boys' educational aspirations declined slightly (.037-.066=--.029) as their parents' financial strain increased.

We next investigated "changes-on-changes" with first-difference models. The coefficients in Table 5 suggest that change in two measures of economic hardship – household income and financial strain – had no significant main effects on change in children's educational aspirations (Models 1 and 2). However, we found evidence that aspirations declined in the face of increasing parental financial strain again in the group with below-median levels of unemployment. For parents without any unemployment experience in

Table 4. OLS Models for 2011 Educational Aspiration

Educational Aspiration	**1**	**2**	**3**	**4**	**5**
Child's Age	-0.075**	-0.064*	-0.062*	-0.082**	-0.076**
	(0.027)	(0.029)	(0.028)	(0.027)	(0.027)
Child Gender (Male = 1)	-0.505***	-0.475**	-0.503**	-0.524***	0.363
	(0.150)	(0.158)	(0.156)	(0.147)	(0.406)
Parent's Educational Aspiration (1989)	-0.082	-0.089	-0.117	-0.477**	-0.069
	(0.067)	(0.075)	(0.073)	(0.154)	(0.068)
Tech/Vocational/Some college	0.267	0.435*	0.346	0.263	0.233
	(0.211)	(0.206)	(0.215)	(0.208)	(0.210)
B.A. and above	0.632*	0.711**	0.709**	0.660**	0.543*
	(0.253)	(0.258)	(0.259)	(0.243)	(0.262)
Additive Financial Problems Index	0.007			-0.094*	0.037
	(0.016)			(0.046)	(0.020)
Log Annual Household Income		0.111	-0.180		
		(0.113)	(0.127)		
One month on average Unemployment Experience			-3.600*		
			(1.805)		
> one month on average Unemployment Experience			-4.613		
			(2.782)		
Child's Gender × AFPI					-0.066*
					(0.031)
One month on average Unemployment Exp. × Log Annual Income			0.334*		
			(0.165)		
> one month on average Unemployment Exp. × Log Annual Income			0.398		
			(0.270)		
Parental Educational Aspiration (1989) × Financial Problems Index				0.028*	
				(0.011)	
Constant	5.845***	4.421**	7.791***	7.387***	5.452***
	(0.544)	(1.522)	(1.638)	(0.805)	(0.560)
N	253	221	221	253	253
N-families	171	147	147	171	171
R-square	0.099	0.124	0.157	0.125	0.118

*p<0.05, ** p<0.01, *** p<0.001*

Figure 3 Log Annual Household Income and Educational Aspirations 2011, Interacting with Unemployment Experience

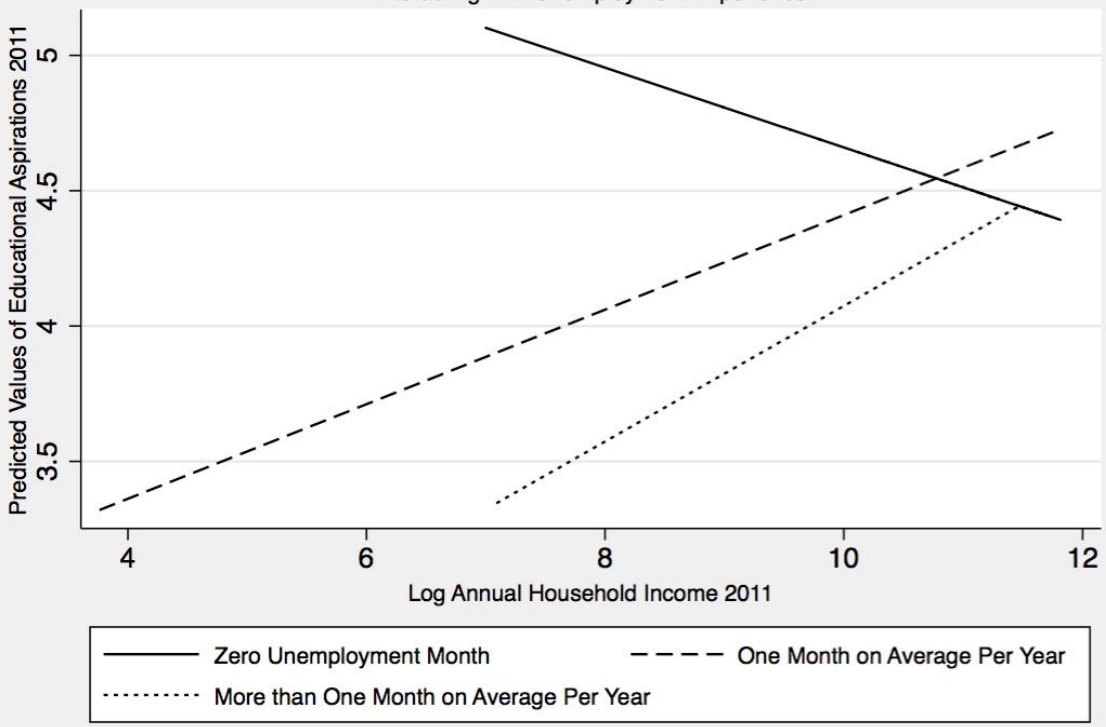
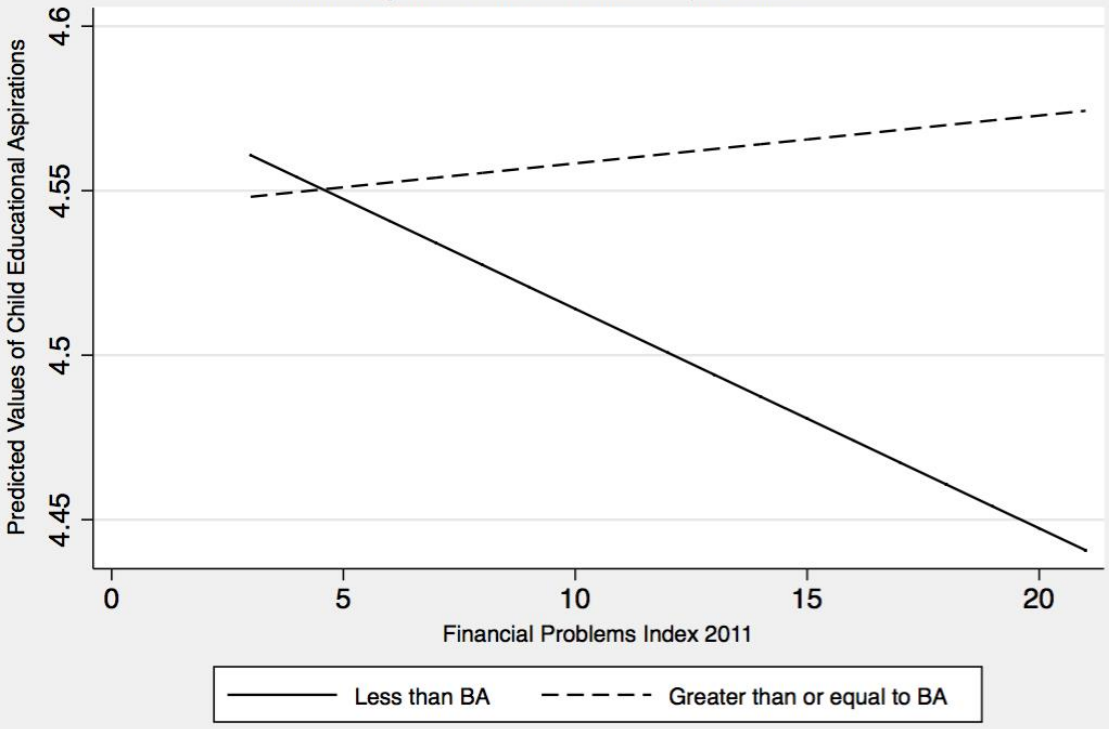


Figure 4 Financial Problems and Educational Aspiration 2011, Interacting with Parent's Educational Aspirations, 1989



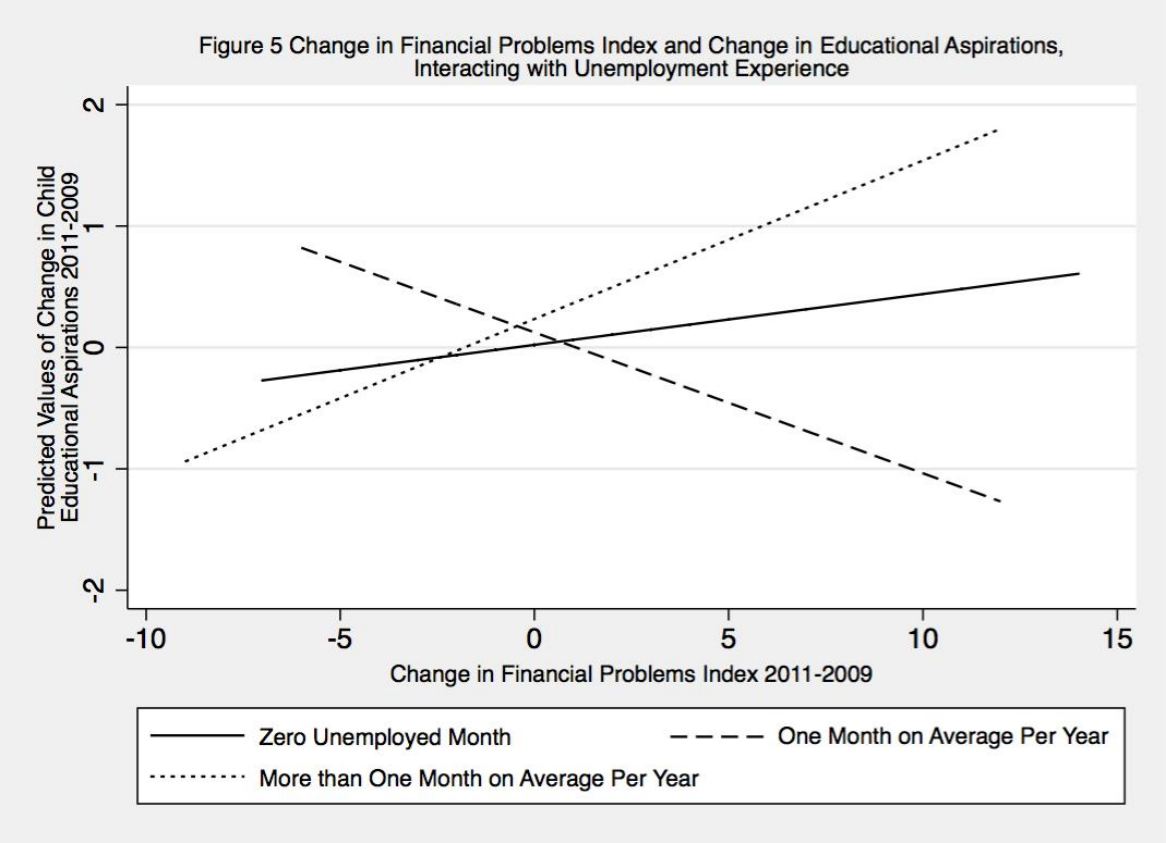
the 11-year interval between January 1997 and December 2007, changes in financial problems between 2009 and 2011 were not reflected in change in their children's educational aspirations (b=.042, n.s.). In contrast, for parents with low levels of unemployment during the same time span, a one-unit increase in financial problems had a significantly more negative effect (that is, b = -.158, p<.05; .042-.158 = -.116) on their children's educational aspirations. This interaction effect is illustrated in Figure 5. The solid line, representing the effect of increasing financial strain on change in aspirations for the children whose parents experienced no unemployment, is relatively flat. Only the children whose parents experienced about one month of unemployment per year exhibited decline in aspirations as parental strain rose. The dotted line, for the children of parents who experienced the most unemployment, is somewhat positive. It should be noted, however, that the difference between the effect of increasing financial problems for children of parents who suffered unemployment for more than a month per year is not significantly different from the effect for children whose parents had no unemployment experience during the past decade (Table 5, Model 3). Still, this trend is difficult to interpret. We speculate that when the parents have experienced some unemployment in the face of the family's financial problems, children may become discouraged about their capacity to attend and succeed in college, decreasing their aspirations. A lot of prior parental unemployment could instead be somewhat "inoculating," as the family adapts to more recurrent economic reversals. Growing financial problems in this context may convince some young people of the importance of attending and graduating from college.

.

Table 5. First-difference Models for Educational Aspiration

Diff. in Educational Aspirations	**1**	**2**	**3**
Diff. log annual household income	0.029		
	(0.115)		
Diff. additive financial problems index (AFPI)		0.023	0.042
		(0.031)	(0.041)
One month on average unemployment experience			0.103
			(0.243)
> one month on average unemployment experience			0.213
			(0.327)
One month on average unemployment exp. × Diff. AFPI			-0.158*
			(0.062)
> one month on average unemployment exp. × Diff. AFPI			0.089
			(0.075)
Constant	0.032	0.039	0.021
	(0.139)	(0.118)	(0.153)
N	127	160	160
N-families	97	124	124
R-square	0	0.004	0.074

** p<0.05, ** p<0.01, *** p<0.001*



Discussion

In probing the consequences of parental hardship for children in the aftermath of the current Great Recession, we find evidence that parents' economic circumstances are reflected in children's achievement orientations. Interestingly, however, we found only one significant main effect. Of 8 main effects tests (2 hardship indicators, namely, log annual household income and the additive financial problems index × 2 outcomes in the 2011 analyses; plus 2 hardship change indicators, that is, difference in log annual household income and difference in the additive financial problems index, × 2 outcomes in the first-difference analyses), we find just one to be statistically significant. Higher household incomes were associated with children's higher economic expectations in 2011 (Table 2 Model 2). Similarly, prior research (Mayer, 1997) found that household income does not matter very much for a range of child outcomes, although when measured over several years it had more predictive power. Schoon (this issue), also shows that household income has no significant effects on achievement orientations in final models for boys and girls. Levine's (2011) fixed effects analysis of data from the National Longitudinal Surveys of Youth found little evidence that parental employment status affected children's cognitive test scores. Interestingly, Elder (1974, p. 139, Table A-19, p. 312), in his study of the Oakland cohort – who experienced the aftermath of the economic collapse in their teen years – also reported that family economic loss during the Depression was not associated with lower occupational ambitions.

Altogether, we tested 40 interactions (2 economic status variables X 5 potential moderators X 2 outcomes X 2 modes of analysis), and found that just six (15 percent) were statistically significant. However, the pattern of moderation is more telling than the sheer number of significant interactions. We found evidence that the parental work history, the familial context of achievement, and the child's gender matter through their conditioning effects. Importantly, we found evidence that children in

families who are more vulnerable by virtue of their parents' prior unemployment, react more strongly to their parents' contemporaneous economic circumstances. That is, the parents' history of unemployment appeared to sensitize children, such that their educational aspirations were more strongly affected by differences in household income and changes in parental financial strain. Differences in parental income had no significant effect on children's 2011 aspirations when their parents had no unemployment experience. But for those whose parents experienced unemployment, educational aspirations rose as household income increased (Figure 3). Similarly, the first-difference model for change in educational aspirations showed that children whose parents had experienced no unemployment did not significantly change their aspirations as their parents' financial strain increased; however, if parents' work histories included some unemployment (one month per year), increases in financial strain reduced children's aspirations (Figure 5).

We find that variables representing what we consider the educational achievement context of the family likewise condition the impacts of recent parental hardship. It should first be noted that parental economic expectations, measured during adolescence, have significant long-term effects on their adolescent children, though measurements of the parent and child generations are separated over a period of more than two decades. The main positive effect of parental economic expectation on children's expectation (Table 2), as well as its significant moderating effect, heightening the impact of change in household income on change in children's expectations (Figure 1), are unique findings of this study. High parental expectations, and a sense of efficacy upon which they are based, perhaps increase children's sensitivity to the effects of increasing (or decreasing) household income, affecting their anticipation of their own economic prospects. Furthermore, high parental aspirations, measured during adolescence, protected children from diminished educational aspirations when parents experienced financial problems (Figure 4). Apparently, those factors that enhance expectations and promote high aspirations during adolescence have long-term consequences, extending even to the next generation. This could be because parental economic expectations and educational aspirations are stable over time. Moreover, the more optimistic and ambitious parents may have higher expectations for their children and have relationships with their children that are of higher quality. Our future analyses will examine these possibilities.

Consistent with many studies, parental education was also associated with more positive achievement orientations among children (see also Schoon, this issue). When parents held BA degrees (or more), their children had significantly higher economic expectations (Table 2) and higher educational aspirations (Table 4) than children whose parents had only high school degrees (or less). Parental intermediate education, however, provided little incremental benefit (over the lowest educational origin category) for children's expectations or aspirations. The findings thus suggest that parents in this study had to obtain four-year college degrees to have a measurable impact on their children's orientations to the future.

Importantly, parental educational attainment moderated the effects of financial strain on children's economic expectations. When parents had only a high school education or less, their children's economic expectations declined from 2009 to 2011 as their parents' financial difficulties increased (Figure 2). We conclude that parents with higher levels of education may be able to buffer the effects of economic hardship on their children's expectations in difficult economic times; conversely, however, their children will not benefit as much when the family's financial prospects improve. Highly educated parents may encourage their children in ways that spill over to their children's confidence in a manner that is protective, irrespective of the immediate economic situation of the family. Financially strapped parents with the highest levels of education may be especially concerned that their children maintain high expectations for the future despite transient economic difficulties. In contrast, poorly educated parents appear to be the more vulnerable, as they are likely the most threatened by economic hardship. With the most limited prospects in the labor market, their opportunities to improve their families' economic positions may be the most constrained. Children who observe their parents' plight may

become discouraged, lessening their confidence in the economic realm.

These findings suggest that to fully understand the implications of families' economic circumstances for children, we must take into account the families' level of vulnerability. Income differences and changes in financial strain have their strongest impacts among those children whose families' circumstances are the most precarious, as indicated by the parent's lack of post-secondary education and prior employment instability. When parents have low levels of education and when they have previously suffered unemployment, their children may face the greatest cumulative disadvantage in the face of immediate economic setbacks. Whereas the difficulties in the contemporary labor force experienced by individuals without post-secondary education are well recognized, this research indicates how such parental disadvantages may extend to their children. To the many good reasons for targeting interventions to these adults (in the form of assistance for further education and job training, supports for staying in school and achieving post-secondary degrees, and the general strengthening of the safety net), we add the possibility that such assistance could significantly heighten the aspirations and confidence of the next generation as their children look to their futures.

Reflecting gender differences in educational attainment, girls in this study had higher educational aspirations than boys. Interestingly, however, we observed no significant gender differences in economic expectations and only one significant interaction of the economic variables with gender: boys' educational aspirations were more responsive to parental financial problems than girls' (see Schoon, this issue). We also found that children's educational aspirations declined as they grew older.

Before proceeding further, a conceptual caveat is in order. A taken-for-granted assumption in our analyses, implicating parental income and financial stress for child achievement outcomes, is that these kinds of indicators of social stratification and hardship matter. This assumption is in accord with a long tradition of research in the United States that addresses the consequences of socio-economic status, indexed by education, income, and occupation, for style of life, values and other psychological orientations, mobility, and children's prospects. Interest in the effects of socio-economic inequality, especially of income, on children's educational achievement and life chances has become especially prominent in the aftermath of the Great Recession (Duncan and Murnane, 2011; Ermisch, Jantti, & Smeeding, 2012). A quite different scholarly tradition, more prevalent in European circles (Bourdieu & Passeron, 1990; Goldthorpe, Llewellyn, & Payne, 1987; Willis, 1977) but also present in the United States (e.g., Wright, 1976), examines social class, not as continua of socio-economic status indicators, but instead in terms of ownership and control over the means of production and the labor power of other workers. These approaches are not altogether distinct; they come together in attempts to address the overlapping character of social class and socio-economic status-related phenomena (Kohn, Naoi, Schoenbach, Schooler, & Slomczynski, 1990; Goldthorpe, 1996; Wright & Perrone, 1977). These alternative perspectives suggest the utility of extending studies of the impacts of the "Great Recession" on children by examining differences and changes in parents' relationship to the means of production, e.g., their employment status (employer, self-employed, employee), employment regulation (distinguishing the "working class" with labor contracts versus the "service class" of professional, managerial and administrative workers), supervisory responsibilities, manual vs. non-manual status, etc.

We should note that this research has additional limitations. The first is methodological. Our two-pronged analytic strategy attempts to make the best use of our data, but each approach has advantages and drawbacks. The initial set of analyses of 2011 outcomes draws on a larger, more inclusive sample, but because other, unobserved variables might account for the significant coefficients, the findings are subject to alternative explanations. The first-difference models have the advantage of being able to rule out some competing explanations (related to unobserved time stable differences), but at the cost of a smaller sample size. But while the patterns of findings across the two sets of analyses are not identical, they yield similar overall conclusions. First, they converge in documenting the absence of main, or additive, effects of contemporaneous (2011) and recent (change from 2009 to 2011) economic

hardship in the family, on children's achievement orientations. Second, they each highlight interactions that suggest that children may be differentially vulnerable to their parents' economic difficulties, depending on prior parental unemployment and the familial context of educational achievement.

Furthermore, while our focus is on the effects of family economic well-being on children, we are observing the associations of the family economic indicators on children's achievement orientations approximately two and four years after the current "Great Recession" began. What we have found may characterize "recessionary times" but do not address the full impact of this historical event. We have no measures of children's orientations before the recession, so we cannot investigate change that may have been provoked by earlier "shocks" - reductions in family income and increases in financial strain at the beginning of the recession. We may have observed stronger effects if child data were obtained just a few years before (that is, in 2006 or 2007), before economic conditions deteriorated. Perhaps partly as a result, effect sizes reported in the tables (R^2) are quite small. Relatedly, while we have observed parents' unemployment history for a long period of time prior to the recession (1997-2007), too few parents in this panel suffered unemployment in the years from 2008 to 2011 (37 parents) to render an analysis of its more recent effects meaningful. Moreover, small sample sizes in key subgroups mitigated against the detection of significant effects.

It should be noted that other factors, beyond the scope of this study, might also moderate the effects of economic hardship in the family of origin on children. For example, the school environment might promote high or low educational aspirations and expectations of the future, compensating for, or exacerbating, the effects of the home environment. Moreover, parents may lessen the consequences of diminishing family resources for their children by shifts in their spending - prioritizing the special needs of their children - and by maintaining high expectations for their children. In this particular set of analyses, we do not consider the effects of diminished quality of parent-child relationships that might accompany increases in financial strain, the extent to which children are aware of the economic hardships their families face, or children's evaluations of how well their families are coping with financial strain. Closer parent-child relationships and children's perceptions that the family is doing well, despite its difficulties, may surely buffer any depressing effects on children's aspirations and goals for the future. Moreover, as indicated by Groh-Samberg and Voges' research (this issue), more affluent parents may significantly influence their children's economic well-being as they move into adulthood, heightening their standard of living and reducing the risk of poverty. Our future analyses will address these possibilities.

Finally, in this study we are addressing only the achievement domain of child well-being (see Crosnoe, this issue). The patterns we observe here may not hold for other outcomes, such as children's self-esteem, depressed mood, or behavioral problems. Walper and Silbereisen (1994) report, in their study of adolescents in Berlin and Warsaw, that parental education did not moderate the effects of economic loss on children's self-derogation and tendencies toward behavioral transgression. We plan to assess the effects of parental economic standing on mental health indicators and behavioral problems in our future research.

Despite these limitations, the linked lives of parents and children are clearly manifest in our findings. At a time of economic turmoil in the larger society, family economic hardships are reflected most strongly in the achievement orientations of children whose parents have the more unstable work histories, the more limited prior aspirations, and the more restricted educations. Perhaps differences and fluctuations in economic well-being in these families are more consequential because the parents do not have the human capital, the cultural and social capital, or the child rearing values and practices that would enable them to protect their children's achievement orientations from the detrimental effects of economic hardship.

Acknowledgements

Earlier versions of this paper were presented at the 2012 Annual Meeting of the American Sociological Association, Denver, and the 2012 Meeting of the Society for Longitudinal and Life Course Studies, Paris. The Youth Development Study was supported by the Eunice Kennedy Shriver National Institute of Child Health & Human Development (R01 HD044138) and by the National Institute of Mental Health (MH42843). The content is solely the responsibility of the authors and does not represent the views of the sponsors. The authors would like to thank Monica Johnson and Jeremy Staff for their critical reviews of an earlier version of the manuscript and their suggestions for improvement, as well as the anonymous reviewers.

References

Allison, P.D. (2009). Fixed Effects Regression Models. Los Angeles, CA: Sage.

Ashby, J.S., & Schoon, I. (2010). Career success: The role of teenage career aspirations, ambition value and gender in predicting adult social status and earnings. Journal of Vocational Behavior, 77, 350-360. http://dx.doi.org/10.1016/j.jvb.2010.06.006

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. Psychological Review, 84, 191-225. http://dx.doi.org/10.1037/0033-295X.84.2.191

Bandura, A. (1982). The self and mechanisms of agency. In Suls, J. (Ed.) Psychological perspectives on the self. Vol. 1. (pp. 3-39). Hillsdale, New Jersey: Lawrence Erlbaum.

Bandura, A. (1997). Self-efficacy: The exercise of control. New York, NY: W.H. Freeman.

Beal, S.J., & Crockett, L.J. (2010). Adolescents' occupational and educational aspirations and expectations: Links to high school activities and adult educational attainment. Developmental Psychology, 46, 258-265. http://dx.doi.org/10.1037/a0017416

Bourdieu, P. & Passeron, J.C. (1990). Reproduction in Education, Society, and Culture. London: Sage.

Bronfenbrenner, U. (1979). The ecology of human development: Experiments by nature and design. Cambridge, MA: Harvard University Press.

Bureau of Labor Statistics (April 19, 2013a). Unemployment Rate Over-the-Year Change in Metropolitan Areas. Retrieved at: http://www.bls.gov/lau/lamtch08.htm on February 11, 2014.

Bureau of Labor Statistics (April 19, 2013b). Unemployment Rate Over-the-Year Change in Metropolitan Areas. Retrieved at: http://www.bls.gov/lau/lamtch10.htm on February 11, 2014.

Bureau of Labor Statistics (April 19, 2013c). Unemployment Rates for Metropolitan Areas. Retrieved at: http://www.bls.gov/lau/lamtrk11.htm on February 11, 2014

Conger, R.D., Ge, X., Elder, G.H., Lorenz, F O., & Simons, R. (1994). Economic stress, coercive family process, and developmental problems of adolescents. Child Development, 65, 541-561. http://dx.doi.org/10.2307/1131401

Crosnoe, R. (2014). Youth, economic hardship, and the worldwide Great Recession. Longitudinal and Life Course Studies *5*,199-204. http://dx.doi.org/10.14301/llcs.v5i2.296

Davies, M., & Kandel, D.B. (1981). Parental and peer influences on adolescents' career plans: Some further evidence. American Journal of Sociology, 87, 363-387. http://dx.doi.org/10.1086/227462

Duncan, G.J. & Murnane, R.J. (Eds.) (2011). Whither opportunity? Rising inequality, schools, and children's life chances. New York: Russell Sage Foundation.

Duncan, G.J., Brooks-Gunn, J., Yeung, W.J., & Smith, J.R. (1998). How much does childhood poverty affect the life chances of children? American Sociological Review 63, 406-423. http://dx.doi.org/10.2307/2657556

Elder, G.H. (1974). Children of the great depression: Social change in life experience. Chicago, IL: University of Chicago Press.

Elder, G.H., Johnson, M., & Crosnoe, R. (2003). The emergence and development of life course theory. In J.T. Mortimer & M.J. Shanahan (Eds.), Handbook of the Life Course (pp. 3-19). New York, NY: Springer. http://dx.doi.org/10.1007/978-0-306-48247-2_1

Elder, G.H., & Rockwell, R.C. (1979). Economic depression and postwar opportunity in men's lives: A study of life patterns and health. In R.G. Simmons (Ed.), Research in Community and Mental Health (Vol. 1, pp. 249-303). Greenwich, CT: JAI Press.

Elder, G. H., & Shanahan, M. J. (2006). The life course and human development. In W. Damon and R. M. Lerner (Eds.), Handbook of child psychology: Theoretical models of human development (Vol. 1, 6th ed., pp. 665-715). New York, NY: Wiley.

Ermisch, J., Jantti, M., & Smeeding, T. (Eds.) (2012). From Parents to children: The intergenerational transmission of advantage. New York: Russell Sage Foundation.

Farkas, G. (2011). Middle and high school skills, behaviors, attitudes, and curriculum enrollment, and their consequences. In G.J. Duncan & R.J. Murname (Eds.) Whither opportunity? Rising inequality, schools, and children's life chances (pp.71-89). New York, NY: Russell Sage Foundation.

Froot, K.A. (1989). Consistent covariance matrix estimation with cross-sectional dependence and heteroskedasticity in financial data. Journal of Financial and Quantitative Analysis, 24, 333-355. http://dx.doi.org/10.2307/2330815

Goldthorpe, J.J. (1996). Class Analysis and the reorientation of class theory: The case of persisting differentials in educational attainment. British Journal of Sociology, 47, 481-505. http://dx.doi.org/10.2307/591365

Goldthorpe, J.H., Llewellyn, C., & Payne, C. (1987). Social Mobility and Class Structure in Britain. Oxford: Clarendon Press.

Grabowski, L.S., Call, K.T., & Mortimer, J.T. (2001). Global and economic self-efficacy in the educational attainment process. Social Psychology Quarterly, 64, 164-179. http://dx.doi.org/10.2307/3090131

Groh-Samberg, O., & Voges, W. Precursors and consequences of youth poverty in Germany. Longitudinal and Life Course Studies *5,* 151-172. http://dx.doi.org/10.14301/llcs.v5i2.281

Halpern-Felsher, B.L., Connell, J.P., Spencer, M.B., Aber, J.L., Duncan, G.J., Clifford, E., Crichlow, W.E., Usinger, P.A., Cole, S.P., Allen, L. & Seidman, E. (1997). Neighborhood and family factors predicting educational risk and attainment in African American and White Children and Adolescents. In J. Brooks-Gunn, G.J. Duncan, & J.L. Aber (Eds.) Neighborhood Poverty. Vol. 1 (146-173). New York: Russell Sage Foundation.

Hauser, R.M., Tsai, S.L., & Sewell, W.H. (1983). A model of stratification with response error in social and psychological variables. Sociology of Education, 56, 20-46. http://dx.doi.org/10.2307/2112301

Heinz, W.R. (2014). Did the Great Recession affect young people's aspirations and reinforce social inequality? Longitudinal and Life Course Studies, XX,XXX-XXX.

Hitlin, S., & Johnson, M.K. (2013). Reconceptualizing agency within the life course: The power of looking ahead. Paper presented at the Annual Meeting of the American Sociological Association, New York.

Hussemann, J.M., Mortimer, J.T., & Zhang, L. (2011, August). Exploring the correlates of parental consent for child survey participation: An intergenerational longitudinal study. Paper presented at the Annual Meeting of the American Sociological Association, Las Vegas, NV.

Institute of Education Sciences. (2011). The condition of education: Table A-24-1 percentage of 25- to 29-year-olds who attained selected levels of education, by race/ethnicity and sex: Selected years, March 1975-2010 (Resource Document). Washington, DC: National Center for Education Statistics, U.S. Department of Education. Retrieved December 14, 2011, from http://nces.ed.gov/programs/coe/tables/table-eda-1.asp

Iversen, R.R., Napolitano, L., & Furstenberg, F.F. (2011). Middle income families in the economic downturn: Challenges and management strategies over time. Longitudinal and Life Course Studies, 2, 286-300. Retrieved October 12, 2012 from http://www.llcsjournal.org/index.php/llcs/article/view/150

Jacob, B.A., & Linkow, T.W. (2011). Educational expectations and attainment. In G.J. Duncan & R.J. Murname (Eds.) Whither opportunity? Rising inequality, schools, and children's life chances (pp. 133-162). New York, NY: Russell Sage Foundation.

Johnson, M.K., & Mortimer, J.T. (2000). Work-family orientations and attainments in the early life course. In T.L. Parcel & D.B. Cornfield (Eds.) Work and family: Research informing policy (pp. 215-248). Thousand Oaks, CA: Sage Publications.

Johnson, M.K., Oesterle, S. & Mortimer, J.T. (2001). Adolescents' anticipations of work-family conflict in a changing societal context. In T.J. Owens & S. Hofferth (Eds.) Children of the millennium: Where have we come from, where are we going? Advances in life course research (Vol. 6, pp. 233-261). Greenwich, CT: JAI.

Kainz, K., Willoughby, M.T., Vernon-Feagans, L., & Burchinal, M.R. (2012). Modeling family economic conditions and young children's development in rural United States: Implications for poverty research. Journal of Family and Economic Issues 33, 410-420. http://dx.doi.org/10.1007/s10834-012-9287-2

Keister, L., & Moller, S. (2000). Wealth inequality in the United States. Annual Review of Sociology, 26, 63-81. http://dx.doi.org/10.1146/annurev.soc.26.1.63

Kerckhoff, A.C. (1995). Social stratification and mobility processes: The interaction between individuals and social structures. In K. Cook, G. Fine, & J. House (Eds.) Sociological perspectives on social psychology (pp. 476-496). New York, NY: Allyn Bacon.

Kohn, M.L. (1969). Class and conformity: A study in values. Homewood, IL: Dorsey.

Kohn, M.L., & Schooler, C. (1983). Work and personality: An inquiry into the impact of social stratification. Norwood, N.J.: Ablex Pub. Corp.
Kohn, M.L., Naoi, A., Schoenbach, C., Schooler, C., & Slomczynski, K.M. (1990). Position in the class structure and psychological functioning in the United States, Japan, and Poland. American Journal of Sociology 95, 964-1008. http://dx.doi.org/10.1086/229382
Lareau, A. (2002). Invisible inequality: Social class and childrearing in black and white families. American Sociological Review, 67, 747-776. http://dx.doi.org/10.2307/3088916
Lareau, A. (2003). Unequal childhoods: Class, race and family life. Berkeley: University of California Press.
Lee, J.C., & Mortimer, J.T. (2009). Family socialization, economic self-efficacy, and the attainment of financial independence in early adulthood. Longitudinal and Life Course Studies, 1, 45-62. Retrieved October 12, 2012 from http://www.llcsjournal.org/index.php/llcs/article/view/28
Levine, P.B. (2011). How does parental unemployment affect children's educational performance? In G.J. Duncan & R.J. Murname (Eds.) Whither opportunity? Rising inequality, schools, and children's life chances (pp. 315-335). New York, NY: Russell Sage Foundation.
Mayer, S.E. (1997). What money can't buy: Family income and children's life chances. Cambridge, MA: Harvard University Press.
Mayer, S.E. (2001). How did the increase in economic inequality between 1970 and 1990 affect children's educational attainment? American Journal of Sociology, 107, 1-32. http://dx.doi.org/10.1086/323149
Mortimer, J.T. (1974). Patterns of intergenerational occupational movements: A smallest-space analysis. American Journal of Sociology, 79, 1278-1299. http://dx.doi.org/10.1086/225678
Mortimer, J.T. (1975). Occupational value socialization in business and professional families. Sociology of Work and Occupations, 2, 29-53. http://dx.doi.org/10.1177/073088847500200102
Mortimer, J.T. (1976). Social class, work and the family: Some implications of the father's occupation for familial relationships and sons' career decisions. Journal of Marriage and the Family, 38, 241-256. http://dx.doi.org/10.2307/350384
Mortimer, J.T. (1994). Individual differences as precursors of youth unemployment. In A.C. Petersen & J.T. Mortimer (Eds.) Youth, unemployment, and society (pp. 172-198) Cambridge, MA: Cambridge University Press. http://dx.doi.org/10.1017/CBO9780511664021.011
Mortimer, J.T. (1996). Social psychological aspects of achievement. In A.C. Kerckhoff (Ed.) Generating social stratification: Toward a new generation of research (pp. 17-36). Boulder, CO: Westview Press.
Mortimer, J.T. (2003). Working and growing up in America. Cambridge, MA: Harvard University Press.
Mortimer, J.T., & Kumka, D.S. (1982). A further examination of the 'occupational linkage' hypothesis. Sociological Quarterly, 23, 3-16. http://dx.doi.org/10.1111/j.1533-8525.1982.tb02216.x
National Bureau of Economic Research, September 6, 2013. U.S. Business Cycle Expansions and Contractions. www.nber.org/cycles.html Retrieved June 6, 2013.
Newman, K.S. (1988). Falling from grace: Downward mobility in the age of affluence. Berkeley: University of California Press.
Porfeli, E.J., & Vondracek, F.W. (2007). Development of work values. In V.B. Skorikov & W. Patton (Eds.) Career development in childhood and adolescence (pp. 105-126). Rotterdam, The Netherlands: Sense Publishers.
Prawitz, A.D., Kalkowski, J.C., & Cohart, J. (2013). Responses to economic pressure by low-income families: financial distress and hopefulness. Journal of Family and Economic Issues, 34, 29-40. http://dx.doi.org/10.1007/s10834-012-9288-1
Reardon, S.F. (2011). The widening academic achievement gap between the rich and the poor: New evidence and possible explanations. In G.J. Duncan & R.J. Murname (Eds.) Whither opportunity? Rising inequality, schools, and children's life chances (pp. 91-115). New York, NY: Russell Sage Foundation.
Reynolds, J.R., & Johnson, M.K. (2011). Change in the stratification of educational expectations and their realization. Social Forces, 90, 85-109. http://dx.doi.org/10.1093/sf/90.1.85
Reynolds, J.R., Steward, M., MacDonald, R., & Sischo, L. (2006). Have adolescents become too ambitious? High school seniors' educational and occupational plans, 1976 to 2000. Social Problems, 53, 186-206. http://dx.doi.org/10.1525/sp.2006.53.2.186
Rogers, W.H. (1993). Regression standard errors in clustered samples. Stata Technical Bulletin, 13, 19-23.
Ruggles, S., Alexander, J.T., Genadek, K., Goeken, R., Schroeder, M.B., and Sobek, M. (2010). Integrated public use microdata series: Version 5.0. [Machine readable database]. Minneapolis: University of Minnesota.
Rutter, M. (1970). Sex differences in children's response to family stress. In E.J. Anthony & C. Koupernik (Eds.) The child in his family (pp. 165-196). New York, NY: Wiley.

Ryu, S., & Mortimer, J.T. (1996). The 'occupational linkage hypothesis' applied to occupational value formation in adolescence. In J.T. Mortimer & M.D. Finch (Eds.) Adolescents, work, and family: An intergenerational developmental analysis (pp. 167-190). Newbury Park, CA: Sage.

Schoon, I. (2010). Planning for the future: Changing education expectations in three British cohorts. Historical Social Research, 35, 99-119. Retrieved October 12, 2012 from http://www.jstor.org/stable/20762452

Schoon, I. (2014). Parental worklessness and the experience of NEET among their offspring. Evidence from the Longitudinal Study of Young People in England (LSYPE). Longitudinal and Life Course Studies *5*, 129-150. http://dx.doi.org/10.14301/llcs.v5i2.279

Schoon, I., Martin, P., & Ross, A. (2007). Career transitions in times of social change: His and her story. Journal of Vocational Behavior, 70, 78-96. http://dx.doi.org/10.1016/j.jvb.2006.04.009

Schulenberg, J., Vondracek, F.W., & Crouter, A.C. (1984). The influence of the family on vocational development. Journal of Marriage and the Family, 10, 129-143. http://dx.doi.org/10.2307/351871

Sewell, W.H., Haller, A.O., & Ohlendorf, G.W. (1970). The educational and early occupational status attainment process: Replication and revision. American Sociological Review, 35, 1014-1027. http://dx.doi.org/10.2307/2093379

Sewell, W.H., Haller, A.O. & Portes, A. (1969). The educational and early occupational attainment process. American Sociological Review, 34, 82-92. http://dx.doi.org/10.2307/2092789

Sewell, W.H. & Hauser, R.M. (1975). Education, occupation, and earnings: Achievement in the early career. New York, NY: Academic Press.

Sewell, W.H., & Hauser, R.M. (1976). Causes and consequences of higher education: Models of the status attainment process. In W.H. Sewell, R.M. Hauser, & D. Featherman (Eds.) Schooling and Achievement in American Society (pp. 9-27). New York, NY: Academic Press.

Sewell, W.H., & Hauser, R.M. (1980). The Wisconsin Longitudinal Study of social and psychological factors in aspirations and achievements. Research in Sociology of Education and Socialization, 1, 59-99. Retrieved October 12, 2012 from http://www.ssc.wisc.edu/wlsresearch/publications/files/_private/Sewell-Hauser_The.Wisconsin.Longitudinal.Study.of.Social.and.Psychological.Factors.in.Aspirations.and.Achievements_1980.pdf

Sewell, W.H., & Shah, V.P. (1968). Social class, parental encouragement, and educational aspirations. American Journal of Sociology, 73, 559-572. http://dx.doi.org/10.1086/224530

Shanahan, M., & Mortimer, J.T. (1996). Understanding the positive consequences of psychosocial stress. In B. Markovsky, M. Lovaglia, & R. Simon (Eds.) Advances in Group Processes (Vol. 13, pp. 189-209). Greenwich, CT: JAI Press.

Sribney, W. (2009). Comparison of standard errors for robust, cluster, and standard estimators. College Station, TX: StataCorp. Retrieved September 20, 2012, from http://www.stata.com/support/faqs/statistics/standard-errors-and-vce-cluster-option/

Stein, C., Hoffmann, E., Bonar, E., Leith, J., Abraham, K., Hamill, A., Kraus, S., Gumber, S., & Fogo, W. (2013). The United States economic crisis: Young adults' reports of economic pressures, financial and religious coping and psychological well-being. Journal of Family and Economic Issues, 34, 200-210. http://dx.doi.org/10.1007/s10834-012-9328-x

U.S. Bureau of the Census. (2011). Income, expenditures, poverty and wealth: Table 703. Average earnings of year-round full-time workers by educational attainment: 2009. (Resource Document. Statistical Abstract of the United States) Washington, DC : U.S. Census Bureau. Retrieved December 14, 2011, from http://www.census.gov/compendia/statab/2012/tables/12s0703.pdf

Vondracek, F.W., Lerner, R.M., & Schulenberg, J.E. (1986). Career development: A life-span developmental approach. Hillsdale, NJ: Lawrence Erlbaum.

Walper, S., & Silbereisen, R.K. (1994). Economic hardship in Polish and German Families: Some Consequences for Adolescents. In R.K. Silbereisen & E. Todt (Eds.) Adolescence in context: The interplay of family, school, peers and work in adjustment. (pp. 125-148). New York, NY: Springer-Verlag.

Williams, R.L. (2000). A note on robust variance estimation for cluster-correlated data. Biometrics, 56, 645-646. http://dx.doi.org/10.1111/j.0006-341X.2000.00645.x

Willis, P. (1977) Learning to Labor. How working class kids get working class jobs. Farnborough, UK: Saxon House.

Wooldridge, J.M. (2002). Econometric analysis of cross section and panel data. Cambridge, MA: MIT Press.

Wright, E.O. (1976). Class boundaries in advanced capitalist societies. New Left Review, 98,3-41.

Wright, E.O, & Perrone. L. (1977). Marxist class categories and income inequality. American Sociological Review, 42, 32-55. http://dx.doi.org/10.2307/2117730

Yeung, W.J. Linver, M.R., & Brooks-Gunn, J. (2002). How money matters for young children's development: Parental investment and family processes. Child Development, 73, 1861-1879. http://dx.doi.org/10.1111/1467-8624.t01-1-00511

Parental worklessness and the experience of NEET among their offspring. Evidence from the Longitudinal Study of Young People in England (LSYPE)

Ingrid Schoon
Institute of Education, University of London
I.Schoon@ioe.ac.uk

(Received December 2013 Revised April 2014) http://dx.doi.org/10.14301/llcs.v5i2.279

Abstract

This paper examines the assocations between parental worklessness and the experiences of their offspring making the transition from school to work during a time that included a major economic downturn. The study draws on data collected for the Longitudinal Study of Young People in England (LSYPE), a cohort of young people born in 1989/90 completing compulsory education in 2006 – just before the onset of the Great Recession. Data on parental worklessness collected between 2004 and 2006 was linked to information about subsequent employment activities of their offspring, in particular the experience of not being in education, employment or training (NEET) between 2007 and 2010 (ages 16 to 20 years). Parental worklessness was significantly associated with their sons' and daughters' experience of being NEET for longer periods of time (months spent in NEET). However, much of this association was explained by a number of other socio-economic risks facing these young people and their families (e.g. low parental education level, living in rented accommodation and in highly deprived neighbourhoods). Furthermore, the role of individual agency, in particular educational achievement orientation (EAO) as a potential mediator was examined. Although parental worklessness was associated with lower levels of EAO, especially among young males, the findings also suggest that EAO can serve as a potential resource for young men and women in adverse economic circumstances. The study does not support the assumption of an inter-generational transmission of a 'culture of worklessness' but points to the role of multiple deprivations and lack of local opportunities in shaping the life chances of young people.

Keywords: worklessness, inter-generational, socio-economic resources, achievement orientation, gender

Introduction

The existing literature suggests that growing up in a workless household can have adverse long-term effects regarding academic and occupational attainment (Ermisch, Francesconi, & Pevalin, 2004), yet the specific issue of inter-generational transmission of worklessness is less well studied, especially in the UK context (Macmillan, 2010; 2011; 2014). Furthermore, there is relatively little understanding of the processes linking the transmission of worklessness from one generation to the next. Indeed the idea that worklessness can be in part explained through familial transmission of values and practices has been called into question (Shildrick, MacDonald, Furlong, Roden, & Crow, 2012). The aims of this paper are to: a. examine the inter-generational link between parental worklessness and a young person's likelihood of being *Not in Education, Employment or Training* (NEET) during a time that included a major economic downturn; b. examine gender differences in the association; and c. assess the role of achievement orientations as a potential mediating mechanism, focusing in particular on educational

aspirations and expectations of young people growing up with workless parents. Drawing on evidence collected for the Longitudinal Study of Young People in England (LSYPE), employment experiences of young people are assessed between ages 16 to 20, after the completion of compulsory schooling, using evidence from a general population sample. The study is guided by a developmental-contextual perspective (Schoon, 2006; Vondraceck, Lerner, & Schulenberg, 1986; Vondracek, 1998), informed by ecological approaches to human development (Bronfenbrenner, 1986; Elder, 1998) that emphasize multiple interacting influences embedded in a wider socio-historical context.

School-to-work transitions in times of economic downturn

The effects of an economic recession are felt most keenly by young people embarking on the transition to adult life (Ashton & Bynner, 2011; Jenkins, Brandolini, Micklewright, & Nolan, 2013). Even if the most critical phase of the recession has passed, there can be long-term and lasting consequences, raising the spectre of a 'lost generation'. Recessionary times are likely to limit employment prospects, and lead to less successful transitions to adulthood (Vuolo, Staff, & Mortimer, 2012). In England and the rest of the UK, the number of young people who are out of work has risen between 2008 and 2011 to its highest level on record (ONS, 2012) and currently one in five people aged 16 to 24 years are looking for work.

In this paper the association between growing up with workless parents and the likelihood of experiencing NEET among their offspring is assessed, as well as gender differences in this association, which are largely ignored in current debates (European Parliament, 2013). The crisis has worsened labour market conditions especially for young men, since male-oriented sectors, in particular manufacturing and construction, were hit first and hardest by the economic slow-down. In the UK the unemployment rate among young males is currently higher than among females, as is the rate of NEET (ONS, 2012). The experience of NEET can be considered as a more comprehensive indicator of hardship than the unemployment rate, as it includes those young people who do not have a job, are not enrolled in training, or are not classified as a student.

Inter-generational transmission of worklessness

The existing literature suggests that growing up in a jobless household can have adverse long-term effects (Ermisch et al. 2004), and has been found to be associated with lower levels of later educational and occupational attainment (McLanahan & Sandefur, 1994; Haveman & Wolfe, 1994; Kiernan, 1997; Schoon et al., 2012) and persistent dependence on social security benefits (Gottschalk, 1996; Iacovou & Berthoud, 2000; Such & Walker, 2002). As adults, children growing up in poor or workless households are more likely to be workless or poor themselves, as compared to children who grow up in households where someone is employed (Gregg, Harkness & Machin, 1999; Such & Walker, 2002). Likewise, evidence on the experiences of children growing up in workless households across Europe suggests that parents' labour market status strongly predicts children's economic well-being, and that children living in households with no employed adults are particularly vulnerable to the experience of income poverty (Harkonen, 2011).

With rising unemployment rates there is now increasing concern about generations of families who have never worked (Coelli, Green, & Warburton, 2007; Ermisch et al., 2004; Gregg & Wadsworth, 2008; Harkonen, 2011; Pemberton, 2008; Platt, 2010) and about the potential scarring effects of household worklessness on the future labour market experiences of contemporary children (Macmillan, 2010; 2011). The United Kingdom has an above average proportion of adults living in workless households compared to the European Union, and also a higher proportion of dependent children living in workless households (European Commission, 2014). Thirteen percent of households with dependent children were workless in the second quarter of 2011, which equates to just over one million workless households with dependent children (ONS, 2011). The question of inter-generational transmission of worklessness is thus obviously of high importance.

There is some evidence that worklessness is transmitted inter-generationally (see Macmillan (2010) for a review), although most studies focused on the transmission from father to son. For example, in the UK context, evidence from the 1958 National Child Development Study (NCDS) suggests that 19% of

sons who experienced a year or more out of work between the ages 23-33 had had a father out of work at age 16, compared to the sample average of 10% (Johnson & Reed, 1996; see also O'Neill & Sweetman , 1998). Macmillan (2010) examined the magnitude of the inter-generational correlation of worklessness using the NCDS and the 1970 British Cohort Study (BCS) and found sons were over twice as likely to experience workless spells themselves if they came from a family where the father experienced worklessness during their childhood. Furthermore, the relationship remained strong, even after controlling for a range of family background characteristics, and the inter-generational correlation in worklessness appears to have increased for the later-born cohort. There is also evidence to suggest that the inter-generational effect depends on conditions of the local labour market, i.e. that it is stronger in labour markets with high unemployment rates (Macmillan, 2011, 2014).

The association between parental worklessness and young peoples' experience of NEET has also been confirmed in a recent study using LSYPE (Schoon et al., 2012), although gender differences in this association were not examined. Furthermore, there is little evidence regarding the *processes* that link parental worklessness to young people's outcomes. The motivation for this research is therefore to obtain a better understanding of gender differences in the association between parental worklessness and the likelihood that a young person will experience NEET, and to gain a better understanding of potential mediating processes and confounders.

Educational achievement orientation (EAO) as a potential mediator

The level of educational qualifications is particularly important in influencing the probability of being NEET, especially among women. Those with higher level qualifications are less likely to experience NEET, or are NEET for a shorter duration (Crawford, Duckworth, Vignoles, & Wyness, 2011). One aim of this study is therefore to assess the role of EAO as a potential mediating process. Is there a significant association between parental worklessness and the EAO of young people? Is the impact of parental worklessness on the employment experiences of their offspring mediated by the child's expression of educational optimism and expectations to participate in higher education?

The importance of educational aspirations as a powerful mediator of the effects of parental socio-economic status on career progression and attainment is well established. Traditional status attainment research has shown that parents of higher socio-economic status have higher aspirations for their children, which are associated with higher aspirations among their offspring (Sewell & Hauser, 1975; Sewell, Hauser, & Wolf, 1980). High child aspirations, in turn, are associated with later academic and career success – a finding which has been consistently confirmed in different cultural and historical contexts (Beal & Crockett, 2010; Johnson & Reynolds, 2013; Kerckhoff, 1993; Kerckhoff, 2001; Schoon & Parsons, 2002; Sewell, Haller, & Ohlendorf, 1970) and for men and women (Mello, 2008; Schoon, Martin, & Ross, 2007; Sewell, Hauser, & Wolf, 1980). Furthermore, future-oriented aspirations can reduce the detrimental effect of parental socio-economic hardship and can be an important resource for young people from disadvantaged backgrounds to achieve against the odds (Schoon, 2006).

There is little understanding of the role of EAOs in the inter-generational transmission of worklessness. Furthermore, educational aspirations and expectations have generally increased considerably in recent years (Reynolds & Pemberton, 2001; Schneider & Stevenson, 1999), especially among women (Reynolds & Burge, 2008; Schoon, 2010). Previous evidence also suggests that young males are more susceptible to their parent's socio-economic situation than females, and that socio-economic hardship is associated with lower aspirations among males than females (Schoon et al., 2007; see also Mortimer, Zhang, Hussemann & Chen-Yu, this volume). Generally the mechanisms linking parental worklessness to their children's outcomes are not well understood. A recent review of the evidence in the UK contexts suggests that there is little evidence to suggest that 'cultures of worklessness' are passed down the generations via low education and work related values (Shildrick et al., 2012). Nonetheless raising aspirations of young people and involvement in higher education have been identified as ways of addressing inter-generational issues in the trans-

mission of worklessness (Pemberton, 2008), and the role of EAO will thus be examined in this study.

Confounding factors

There is a fundamental concern that the estimated effects of parental worklessness might be spurious, due to the association with other problematic circumstances (Ermisch et al., 2004; Schoon et al., 2012). It is therefore necessary to take into account potential confounders. In particular, this analysis will control for characteristics of the family, the wider social context, as well as characteristics of the young person, including ethnic background and previous academic attainment.

Factors considered here include socio-demographic family characteristics, family structure, housing conditions, and health, as well as area deprivation (Haveman & Wolfe, 1994; Iacovou & Berthoud, 2000; McLanahan, 1997, 2004). Parental worklessness is increasingly concentrated in certain subgroups of the population and in certain geographic areas (Gregg & Wadsworth, 2001; Macmillan, 2014). For example, single adult households are far more likely to be workless than households with two adults (both with and without children), and workless households are significantly more likely to experience poverty than households in which at least one adult is employed (ONS, 2011). Comparing poverty rates of children in jobless households in Europe, Harkonen (2011) found that in the UK and Ireland these were higher than the average in other countries, reaching above 50%. Furthermore, disability strongly affects work rates (Berthoud, 2011), and worklessness is more prevalent in urban areas and the North of England (Webster, 2000). Hence it is important to allow for these other risk factors when modelling the relationship between parental worklessness and outcomes.

Socio-economic family hardship, characterised by worklessness, low income, low levels of education, lone parenthood, large families living in rented accommodation, and parental ill health, create a context that affects young people's development and adjustment. There is consistent evidence on the harmful effects of growing up in circumstances in which families are unable to provide the experiences, resources and services that are crucial for young people to thrive (Bradley & Corwyn, 2002; Bradshaw & Mayhew, 2005; Engle & Black, 2008). Moreover, previous research suggests that where one lives matters, in terms of quality of family life and life opportunities. Living in a disadvantaged neighbourhood, especially in urban areas, has been associated with lower levels of academic performance and EAO (Ainsworth, 2002; Brooks-Gunn, Duncan, & Aber, 1997; Jencks & Mayer, 1990; Murry, Berkel, Gaylord-Harden, Copeland-Linder & Nation, 2011).

Certainly the existing evidence suggests that the relationship between any single risk factor and subsequent outcomes tends to be weak. Usually many risks are involved in determining an outcome, and serious risk emanates from the accumulation of risk factors (Garmezy, 1991; Rutter, 1981, 2009). The analysis will thus control for a number of potentially interlinked risk factors (such as family demographics, household income, family structure, parental health, home ownership and number of siblings living in the household, as well as area deprivation) that might explain the association between parental worklessness and the experience of NEET among their offspring. Furthermore, individual factors that have been shown to be associated with EAO of young people are taken into account, in particular the young person's ethnicity and previous academic attainment. Previous academic attainment has been shown to influence the education aspirations and expectations of young people and those of their parents (Gutman, Schoon & Sabates, 2012; Marjoribanks, 1989; Schoon, 2010). Furthermore, in the current UK context, young people from ethnic minority background express higher educational aspirations than whites (Gutman et al., 2012; Strand, 2007, 2008), which has been attributed to differences in cultural attitudes towards higher education (Torgerson et al., 2008).

Moreover, the analysis will take into account the duration of parental worklessness. Most previous studies have conceptualised worklessness as a state, without taking into account that households may be moving in and out of worklessness over time. This study thus adds to previous research by assessing the relationship between repeated (or persistent) versus temporary parental worklessness, differentiating between families who never experienced worklessness during the period of observation, those who moved in and out of worklessness, and those who were persistently workless at several (at least three)

subsequent years of observation. Furthermore, the duration of NEET experienced by young people is taken into account, examining the number of months spent in NEET between ages 16 to 20 (between September 2006 and May 2010).

Research questions and hypotheses

Based on previous evidence this study is guided by four hypotheses:

1. Parental worklessness, in particular the repeated experience of worklessness, increases the likelihood that their offspring will experience NEET for longer periods. This association is expected to hold even after controlling for the confounding factors.
2. Given the lack of prior research evidence regarding gender differences in the association between parental worklessness and NEET, no assumptions about the direction of the effects are specified.
3. It is assumed that the effect of parental worklessness on young people's experience of NEET is mediated by the EAO of the young person, i.e. their aspirations and expectations regarding participation in higher education.
4. As there is little evidence on gender differences in the role of aspirations as mediators between parental worklessness and employment experiences of their offspring, no assumptions about the direction of effects are specified. In contemporary cohorts women have higher education aspirations than men, especially young women from less privileged backgrounds compared to men in similar circumstances (Schoon, 2010). Thus, EAOs could play a stronger role for women, although the effect of achievement orientation on outcomes could be diluted when more women have high ambitions.

The study will contribute to the literature in multiple ways: first, experiences of a current cohort of young people are examined to assess the extent of inter-generational transmission of worklessness; second, gender differences in the association between parental worklessness and the long-term experience of NEET are assessed; third, the role of EAO as potential mediators of this association is tested; fourth, longitudinal data is used to examine the duration of parental worklessness as well as the experience of NEET among young people; and fifth, a number of confounding factors are taken into account in assessing the independent effects of parental worklessness on EAOs and employment outcomes.

Method

Data

The study is based on data collected for the Longitudinal Study of Young People in England (LSYPE). LSYPE is a panel study of 15,770 young people born between 1st September 1989 and 31st August 1990. Sample members were all young people in school year 9 (age 14) or equivalent, in England in February 2004. LSYPE oversampled ethnic minorities and special design weights are used in the analysis (for more details see https://www.education.gov.uk/ilsype/workspaces/public/wiki/Welcome).

Annual face-to-face interviews have been conducted with young people and their parents since 2004, and linkage is available to other administrative data, such as the National Pupil Database (NPD), which includes national assessments for all children in England. From LSYPE, information from Wave 1 to Wave 7 of the dataset was used, covering ages 14 to 20 years. From NPD, a national assessment given at age 11 is used as an indicator of previous academic performance.

Analytic sample

As all longitudinal studies, LSYPE experienced sample loss between the multiple waves. The analytic sample used for this study comprises individuals with complete data on parental worklessness and own employment histories between ages 16 to 20. This provided a sample of 5137 males and 4742 females. The sample is largely representative of the original sample, although there is some greater socioeconomic disadvantage among young people who did not continue in the study. Special sample weights, which are calculated and available from the LSYPE website, were applied to account for differential selection probabilities and non-response bias.

Measures

Parental worklessness

Information on parental employment status was collected annually between 2004 and 2006. Parental worklessness was assessed at the household level (not the individual level). Analyses using individual level data on unemployment rather than household data on worklessness have reached very different conclusions, even when using the same sources of information (Gregg & Wadsworth, 2001). For example, while individual workless rates have fallen over the last twenty years, household workless rates have not, suggesting growing inequality in the distribution of work across households.

A workless family was defined as a family in which no parent living in the household was working at the time the family was interviewed (comprising those who were looking for work, as well as those who were economically inactive, not looking for work because of health problems, disability, or looking after the family). It was only considered whether or not the parents in the household were working. There may have been other employed individuals in the household, such as grandparents or older siblings.

Using the data longitudinally allowed us to identify families where parents:

- were never workless at any of the three assessment points (*continuously working*)
- moved in and out of worklessness (*temporary worklessness*)
- were workless over the three (LSYPE) assessment points (*persistent worklessness*).

It cannot be assumed that the families that were identified as persistent workless were indeed workless throughout the whole period under consideration as the families were not observed continuously and there might have been some fluctuation in family and household circumstances. The discussion of persistent worklessness is therefore subject to this caveat.

NEET

Information on young people's activity status between ages 16-20 years is based on monthly activity history data collected as part of the study. The measure of NEET used in this paper thus gives an indication of the total number of months in NEET between ages 16 to 20 (September 2006 to May 2010). It can range from 0 to 45 months.

Family demographics

Parental education. Information on mother's and father's highest educational level were gathered at Wave1, and were coded into six categories using the National Vocational Qualification (NVQ) levels: 1= no qualifications; 2 = qualifications at level 1, equivalent to five GCSEs[i] at grades D to G; 3 = qualifications at level 2, equivalent to seven GCSEs at grades A to C; 4 = qualifications at level 3, equivalent to three and a half A levels which enables access to University; 5 = higher qualifications not at degree level; 6 = degree level qualifications. The highest level of either parent was used in the analysis, following the dominance approach (Erikson, 1984). *Lone parent family.* Measured at Wave1 in the LSYPE, this variable is coded as 1 if the young person lives in a lone parent family and 0 if two parents are present. *Teen parent*. This variable is coded 1 if the cohort member was born to a teen mother and 0 otherwise. *Home ownership* in Wave 1 is coded as 1 if the family owns their own home and 0 if they are renting. *Number of siblings* comprises a measure of how many siblings the young person has. *Gross household income* was reported by the main parent at wave 1. The banded information was dichotomised to differentiate between those in the lowest income group (less than £10,400 per annum) against others. *Long standing illness or disability in the family* was reported by the parent at wave 1 and is coded 1 if either parent reported a long standing illness or disability and 0 if not.

Area characteristics. The *Index of Multiple Deprivation (IMD)* was measured at wave 1 to provide a relative measure of deprivation at the small area level across England. The IMD is made up of seven constituent domains comprising income, employment, education, crime, health deprivation and disability; barriers to housing and services deprivation; and living environment deprivation (for more details see http://data.gov.uk/dataset/index-of-multiple-deprivation). Areas are ranked from least deprived to most deprived, on an overall composite measure of multiple deprivation. Another source of geographic information is the urban/rural classification in LSYPE, a measure developed by the Department for Environment Food and Rural Affairs (Collingwood et al., 2010).

Rurality of an area was coded as 0, contrasting it to urban areas or towns coded as 1. Information on rurality and multiple area deprivation provide important contextual information regarding the communities that study members are growing up in.

Characteristics of the Young Person

Ethnicity. The ethnicity of the adolescent was coded as (0) white, versus (1) other ethnic groups. Given the ethnic diversity in England, the different ethnic groups were too numerous and the number of each group was too small to examine differences among the groups individually in our model.

Academic performance at age 11. Academic performance was calculated using a latent variable comprising maths, english and science scores in national curriculum tests given at the end of Key Stage 2 (i.e., age 11) [ii].

Educational Achievement Orientation (EAO). An EOA measure was created, comprising 3 indicators of educational aspirations and expectations. The young people were asked, in Wave 3, whether they wanted to stay on in post-compulsory schooling. *YP wants to stay on post-16* is coded 1 when the individual plans to stay on and 0 when they intend to leave. The young people were also asked about their *intention to apply for university* and the *likelihood of getting into university* if they apply. Both questions were coded on a 4-point scale with response options 1=very likely, 2=likely, 3=not likely, and 4 =not at all likely. The three items were combined into a measure of EAO using principal component analysis, and saving the factor score for further analysis. The internal consistency of the 3-item scale is satisfactory (α=.70) and the three items load well on one underlying dimension (ranging from .61 for higher education aspiration, .87 for intention to apply for university and .85 for the likelihood to be accepted) explaining about 63% of the variance. A higher score indicates higher levels of EAO.

Statistical analysis

All analyses were carried out using the software packages SPSS20 and STATA12. Separate models were run for males and females following the assumption that EAO and NEET are experienced differently by men and women. To test our assumptions stepwise OLS regression models were used to assess the independent effects of parental worklessness, additional socio-demographic factors, and individual characteristics. Gender differences were assessed using X^2- tests, t-tests and differences between slopes tests.To account for missingness in the data, multiple imputation was applied. STATA 12 implements chained equations (MICE) which can handle variables of different measurement types. It is a principled, simulation-based approach for analyzing incomplete data. The objective is not to predict missing values as close as possible to the true ones, but to handle missing data in a manner that results in valid statistical inference, correcting for measurement error in the data (Royston, Carlin, & White, 2009; Rubin, 1996). Twenty data sets were imputed for the analytic sample. The estimates from the imputed datasets are combined, or pooled, to generate a single set of estimates.

Results

Table 1 gives the descriptive statistics for all the measures used in the study. The majority of young people grew up in a working household, about 5% experienced temporary worklessness of their parents, and about 10% experienced persistent worklessness over the three observation points 2004-2006. There were no gender differences in the frequencies of the demographic variables. Females, however, had higher levels of academic attainment at age 11 ($p < .001$), their EAO was higher than that of boys ($p<.001$), and they experienced fewer months NEET than males ($p<.001$).

Table 1. Descriptive statistics (weighted)

	Males (n=5,137)	Females (n=4,742)	All n=9,879)	Gender differences
Parental worklessness				n.s.
Always working	85.9	86.0	85.9	
Temporary worklessness	4.8	5.7	5.2	
Persistent worklessness	9.3	8.3	8.8	
Additional Risk Factors				
Parental education				n.s.
NCQ5 (degree level)	19.9	19.8	19.8	
NVQ4 (higher education–but below degree level)	17.5	17.6	17.6	
NVQ3 (A-level)	18.5	18.9	18.7	
NVQ2 (GCSE –level)	26.3	26.4	26.4	
NVQ1 (some qualifications)	7.7	7.7	7.7	
No qualifications	10.1	9.5	9.8	
Teenaged mother at birth	5.8	5.4	5.6	n.s.
Single parent household	21.1	21.7	21.4	n.s.
Number of siblings (none)	14.0	14.2	14.1	n.s.
1	45.4	45.1	45.3	
2	25.9	26.6	26.2	
3+	14.7	14.1	14.4	
Home ownership	77.4	78.2	77.8	n.s.
Gross household income				
Less than £10,400	13.8	14.4	14.1	n.s.
Long-standing illness/disability in the family	19.0	19.5	19.2	n.s.
Urban/rural	88.7	87.9	88.3	n.s
IMD (mean)	20.8	20.5	20.6	n.s.
Characteristics of Young Person				
YP ethnicity minority	10.6	11.0	10.8	n.s.
Previous academic attainment at KS2 (age 11), mean [std])	26.92 [4.33]	27.30 [3.98]	27.11 [4.17]	p<.001
EAO (age 16, mean [std])	-.24 [1.10]	.06 [.92]	.10 [1.03]	p<.000
NEET				
NEET Total months (Sept 2006 to May 2010) - mean [std]	3.5 [7.25]	3.1 [7.28]	3.3 [7.26]	p<.003

Note. YP indicates Young Person; IMD indicates Index of Multiple Deprivation; KS2 indicates Key Stage 2; and EAO indicates Educational Achievement Orientation.

The association between parental worklessness and young people's EAO

Stepwise OLS regression models were used to assess the direct association between parental worklessness and EAO (Model 1). In a next step the socio-demographic confounders were added to the model (Model 2) to assess the independent association between parental worklessness and EAO, over and above the control variables. Model 3 then included the individual characteristics: ethnicity and previous academic attainment at age 11 (Key Stage 2). Model 4 adds interaction terms between temporary and persistent worklessness and academic attainment at age 11.

Table 2 presents the OLS unstandardized coefficients and standard errors for males. Model 1 in Table 2 shows that parental worklessness had a significant main effect on EAO. Both temporary and persistent parental worklessness are associated with reduced levels of EAO. Adding the control variables to the model considerably reduced the association between parental worklessness and EAO, and for males only the association between persistent worklessness and EAO remained significant (Model 2). The findings suggest that much of the association between parental worklessness and achievement motivation (in particular regarding temporary worklessness) can be explained by the socio-demographic family characteristics included in the model. There were independent risk effects from low parental education (less than degree level education), having a young mother and many siblings. Home ownership, higher levels of household income and living in an urban area were associated with higher levels of achievement motivation. Model 3 added the individual level variables, which also showed independent effects: young men from ethnic minority backgrounds expressed higher EAO than white males, as did males who performed well in the Key Stage 2 assessments. Independent risk effects in Model 3 are apparent for low levels of parental education and household income. Adding the individual level variables led to a change in sign of the association between parental worklessness and EAO, suggesting a statistical suppression. That is, it is likely that parental worklessness is associated with poorer academic attainment, which would reduce EAO. Maybe children of workless parents recognize the value of higher education to avoid their parents' plight and aim high regarding their own education participation.

Adding interaction terms between temporary and persistent parental worklessness and previous academic attainment to the model (Model 4), provides further information about the inter-relations of academic achievement and worklessness. In this specification, the coefficient for previous academic attainment indicates its effect for the reference group, always working: .116 ($p<.05$). The interaction terms represent the differences between this academic achievement effect and that for children of the temporarily workless and persistently workless respectively. For example, for children of persistently workless parents, the effect of academic achievement is .056 (.116 - .060=.056). Thus, children from persistently, as well as temporarily workless families would still benefit from high levels of achievement regarding their EAO , but not as much as those from working families.

Table 3 presents the OLS unstandardized coefficients and standard errors for females, using the same modelling strategy as above. Model 1 in Table 3 shows that parental worklessness had a significant main effect on EAO. Both temporary and persistent parental worklessness are associated with reduced levels of EAO. Adding the control variables to the model considerably reduced the association between parental worklessness and EAO, and only the association between temporary worklessness and EAO remained significant (Model 2). There were independent risk effects from low parental education (less than degree level education) and having many siblings. Home ownership was associated with higher levels of achievement motivation. Model 3 added the individual level variables, which also showed independent effects: young females from ethnic minority background expressed higher EAO than white females, as did females who performed well in the Key Stage 2 assessments. In Model 3, only parental education and home ownership retained significant independent effects. For females the interaction terms between temporary and persistent parental worklessness and previous academic attainment were also significant (Model 4), suggesting a similar pattern as for males, i.e., the benefit of high academic achievement regarding EAO is significant, yet reduced under conditions of worklessness.

Table 2. Predicting young person's EAO – MALES (unstandardised OLS regression coefficients)

	Model 1 Coefficient (Std. Error)	**Model 2** Coefficient (Std. Error)	**Model 3** Coefficient (Std. Error)	**Model 4** Coefficient (Std. Error)
Parental worklessness				
Always working (ref)				
Temporary worklessness	-.375* (.077)	-.026 (.089)	.032 (.087)	.985* (.391)
Persistent worklessness	-.365 * (.051)	-.213* (.072)	.277* (.068)	1.739* (.274)
Additional Risk Factors				
Parental education				
NCQ5 (degree =ref)				
NVQ4		-.546* (.051)	-.356* (.047)	-.343* (.047)
NVQ3		-.772* (.054)	-.540* (.049)	-.519* (.049)
NVQ2		-.905* (.048)	-.591* (.046)	-.567* (.047)
NVQ1		-1.153* (.077)	-.722* (.076)	-.697* (.076)
No qualifications		-.835* (.072)	-.516* (.071)	-.524* (.070)
Teenaged mother at birth		-.288* (.077)	-.149 (.079)	-.157$ (.079)
Single parent household		-.059 (.051)	-.063 (.048)	-.062 (.047)
Number of siblings		-.036 # (.017)	-.030 (.017)	-.028 (.017)
Home Ownership		.183* (.052)	.075 (.049)	.077 (.049)
Gross household income		.035#(.012)	.023$ (.011)	.021 (.011)
LS illness/disability in the family		-.083 (.050)	-.072 (.046)	-.067 (.046)
Urban/rural		.127# (.059)	.093 (.054)	.087 (.054)
IMD		-.001 (.001)	-.000 (.001)	-.000 (.001)
Characteristics of Young Person				
YP ethnicity minority			.692* (.038)	.703* (.038)
Previous academic attainment (KS2)			.107* (.004)	.116* (.004)
Temporary worklessness x KS2 achievement				-.038# (.016)
Persistent worklessness x KS2 achievement				-.060* (.011)
Constant	-.191* (.018)	.096 (.097)	-2.956*(.154)	-3.232*(.164)
R^2	.01	.15	.31	.31

*Note. * p <.001; # p<.01; $ p <.05. An interaction term between parental worklessness and Key Stage 2 achievement was introduced into this model to test the moderating role of earlier achievement for different levels of parental worklessness. YP indicates Young Person; IMD indicates Index of Multiple Deprivation; KS2 indicates Key Stage 2; and EAO indicates Educational Achievement Orientation.*

Table 3. Predicting young person's EAO – FEMALES (unstandardised OLS regression coefficients)

	Model 1 Coefficient (Standard Error)	**Model 2** Coefficient (Standard Error)	**Model 3** Coefficient (Standard Error)	**Model 4** Coefficient (Standard. Error)
Parental worklessness				
Always working (ref)				
Temporary worklessness	-.406* (.072)	-.163$ (.078)	-.145 (.077)	.724 (.376)
Persistent worklessness	-.304 * (.052)	-.032 (.074)	-.002 (.069)	.746# (.289)
Additional Risk Factors				
Parental education				
NCQ5 (degree =ref)				
NVQ4		-.305* (.043)	-.186* (.040)	-.179* (.040)
NVQ3		-.503* (.045)	-.307* (.042)	-.298* (.042)
NVQ2		-.638* (.043)	-.379* (.041)	-.366* (.041)
NVQ1		-.717* (.069)	-.360* (.066)	-.356* (.066)
No qualifications		-.639* (.070)	-.404* (.068)	-.404* (.067)
Teenaged mother at birth		-.029 (.076)	.001 (.072)	-.004 (.071)
Single parent household		-.011 (.046)	-.037 (.043)	-.029 (.043)
Number of siblings		-.042# (.016)	-.023 (.015)	-.024 (.015)
Home Ownership		.232* (.049)	.115# (.046)	.114# (.046)
Gross household income		.011 (.011)	-.003 (.010)	-.003 (.010)
LS illness/disability in the family		-.034 (.040)	.027 (.036)	.026 (.036)
Urban/rural		-.056 (.044)	-.073 (.040)	-.075 (.040)
IMD		-.001 (.001)	-.001 (.001)	-.001 (.001)
Characteristics of Young Person				
YP ethnicity minority			.541* (.035)	.546* (.035)
Previous academic attainment (KS2)			.094* (.004)	.099* (.004)
Temporary worklessness x KS2 achievement				-.034$ (.015)
Persistent worklessness x KS2 achievement				-.030* (.011)
Constant	.111* (.016)	.378* (.083)	-2.290*(.136)	-2.956*(.154)
R^2	.02	.11	.28	.28

*Note. * p <.001; # p<.01; $ p <.05. As in the model for males, an interaction term between parental worklessness and Key Stage 2 achievement was introduced into this model. YP indicates Young Person; IMD indicates Index of Multiple Deprivation; KS2 indicates Key Stage 2; and EAO indicates Educational Achievement Orientation*.

The association between parental worklessness and NEET

Next, the association between parental worklessness and experience of NEET (number of months NEET between September 2006 and May 2010) among young males and females is assessed in a stepwise OLS regression, as above. Model 1 gives the direct associations between parental worklessness and the total number of months the young person has experienced NEET. Model 2 adds the socio-demographic controls, and Model 3 adds characteristics of the individual (ethnicity, previous academic attainment, and EAO at age 16), and Model 4 adds the interaction terms between parental worklessness and EAO to assess their combined effects on the experience of NEET.

Table 4 presents the OLS unstandardized coefficients and standard errors for males. Model 1 in Table 4 shows that parental worklessness had a significant main effect for the young males being NEET. Both temporary and persistent parental worklessness were associated with an increased number of months in NEET. The average total number of months NEET for males growing up with persistently workless parents was 7.60, for males with temporary workless parents it was 6.01 months, and for males with parents who were always working it was 2.97 months. Adding the control variables to the model considerably reduced the association between parental worklessness and the experience of NEET. For males, only the association between persistent worklessness and NEET remained significant (Model 2). Furthermore there were independent risk effects from low parental education (in particular where parents had no qualifications), growing up in a single parent household, living in an urban area, or an area with a high level of multiple deprivation. Home ownership was associated with being fewer months NEET. Model 3 added the individual level variables, which also showed an independent effect: young men from ethnic minority background experienced fewer month being NEET, as did those who did well in their Key Stage 2 examination and who expressed higher levels of EAO at age 16. Among the socio-demographic control variables in Model 3, growing up with a single parent, living in rented accommodation, an urban area or an area with high levels of multiple deprivation maintained significant independent risk effects. In Model 4 the interaction terms were added, suggesting that there was a significant interaction between persistent parental worklessness and EAO. The significant coefficient (b=-2.209, p<.000) indicates that young men from persistently workless families who maintained a positive EAO were experiencing fewer months NEET. With increasing levels of EAO the risk of NEET among young people growing up in a workless household is significantly reduced. Furthermore, adding the interaction term reduced the direct association between parental worklessness and NEET to non-significance. There remain significant independent risk effects from growing up in a single parent household, lack of home ownership, living in an urban area or an area with high levels of multiple deprivation. There was no significant interaction between temporary parental worklessness and EAO.

The results for females are presented in Table 5. Model 1 in Table 5 shows that parental worklessness had a significant main effect for being NEET. Both temporary and persistent parental worklessness were associated with an increased number of months in NEET. The average number of months NEET for females growing up with persistently workless parents was 6.62, for females with temporary workless parents it was 6.37 months, and for females with parents who were always working it was 2.50 months. Adding the control variables to the model considerably reduced the association between parental worklessness and the experience of NEET. For females, only the association between temporary worklessness and NEET remained significant (Model 2). There were independent risk effects from low parental education, growing up with many siblings, lack of home ownership and living in an area with a high level of multiple deprivation. Model 3 added the individual level variables, which also showed independent effects: young women from ethnic minority background experienced fewer month being NEET, as did those who did well in their Key Stage 2 examination and who expressed higher levels of EAO at age 16. Among the socio-demographic control variables in Model 3, living in rented accommodation, or an area with high levels of multiple deprivation maintained significant independent risk effects.

Table 4. Predicting experience of NEET (number of months) – MALES (unstandardised OLS regression coefficients)

	Model 1 Coefficient (Std. Error)	**Model 2** Coefficient (Std. Error)	**Model 3** Coefficient (Std. Error)	**Model 4** Coefficient (Std. Error)
Parental worklessness				
Always working (ref)				
Temporary worklessness	3.043* (.596)	1.077 (.713)	.781 (.694)	.123 (.536)
Persistent worklessness	4.631* (.574)	1.465$ (.720)	1.781# (.717)	.637 (.660)
Additional risk factors				
Parental education				
NCQ5 (degree =ref)				
NVQ4		.220 (.308)	-.542 (.309)	-.432 (.308)
NVQ3		.472 (.321)	-.645 (.328)	-.497 (.326)
NVQ2		.755# (.306)	-.600 (.316)	-.404 (.315)
NVQ1		.993 (.532)	-.679 (.543)	-.472 (.544)
No qualifications		2.507* (.618)	.951 (.603)	1.103 (.603)
Teenaged mother at birth		.484 (.635)	.417 (.654)	.272 (.655)
Single parent household		.994# (.373)	.882# (.361)	.825# (.361)
Number of siblings		.106 (.123)	.025 (.123)	.045 (.124)
Home Ownership		-1.441* (.396)	-.875# (.389)	-.821$ (.388)
Gross household income		-.025 (.087)	.017 (.083)	.009 (.082)
LS illness/disability in the family		.481 (.366)	.381 (.364)	.408 (.361)
Urban/rural		.763# (.269)	.859# (.281)	.849# (.278)
IMD		.027# (.009)	.026# (.009)	.026# (.009)
Characteristics of young person				
YP ethnicity minority			-.884# (.341)	-.662$ (.335)
Previous academic attainment (KS2)			-.172* (.038)	-.170* (.038)
YP EAO			-.971* (.136)	-.753* (.138)
Temporary worklessness x EAO				-1.165 (.612)
Persistent worklessness x EAO				-2.209* (.577)
Constant	2.970* (.106)	2.140* (.635)	7.008* (1.274)	6.887* (1.261)
R^2	.04	.07	.11	.12

*Note: * p <.001; # p<.01; $ p <.05. An interaction term between parental worklessness and EAO was introduced into this model to test its potential moderating role for different levels of parental worklessness. YP indicates Young Person; IMD indicates Index of Multiple Deprivation; KS2 indicates Key Stage 2; and EAO indicates Educational Achievement Orientation.*

Table 5. Predicting experience of NEET (number of months) – FEMALES (unstandardised OLS regression coefficients)

	Model 1 Coefficient (Std. Error)	**Model 2** Coefficient (Std. Error)	**Model 3** Coefficient (Std. Error)	**Model 4** Coefficient (Std. Error)
Parental worklessness				
Always working (ref)				
Temporary worklessness	3.873* (.741)	1.987# (.768)	1.510$ (.753)	1.063 (.647)
Persistent worklessness	4.126* .565)	1.229 (.705)	1.333 (.705)	.699 (.655)
Additional risk factors				
Parental education				
NCQ5 (degree =ref)				
NVQ4		.004 (.307)	-.739# (.309)	-.650# (.307)
NVQ3		-.220 (.297)	-1.476* (.311)	-1.355* (.308)
NVQ2		.338 (.324)	-1.186* (.334)	-1.059* (.332)
NVQ1		1.765# (.709)	-.177 (.677)	-.126 (.670)
No qualifications		1.673# (.651)	.014 (.632)	.159 (.626)
Teenaged mother at birth		-.444 (.640)	-1.047 (.594)	-1.089 (.593)
Single parent household		-.131 (.366)	-.015 (.359)	-.040 (.353)
Number of siblings		.301# (.136)	.180 (.136)	.192 (.135)
Home Ownership)		-1.751* (.436)	-1.288# (.437)	-1.266# (.437)
Gross household income		-.030 (.091)	.027 (.087)	.021 (.086)
LS illness/disability in the family		.621 (.364)	.476 (.356)	.482 (.353)
Urban/rural		.441 (.335)	.444 (.337)	.458 (.334)
IMD		.032# (.010)	.033* (.010)	.033* (.010)
Characteristics of young person				
YP ethnicity minority			-.921# (.319)	-.683# (.318)
Previous academic attainment (KS2)			-.235* (.045)	-.241* (.045)
YP EAO			-1.286* (.180)	-.945* (.175)
Temporary worklessness x EAO				-1.772 (.922)
Persistent worklessness x EAO				-2.414* (.650)
Constant	2.496* (.112)	2.351* (.689)	9.640* (1.426)	9.61* (1.411)
R^2	.04	.07	.13	.14

*Note. * p <.001; # p<.01; $ p <.05. An interaction term between parental worklessness and EAO was introduced into this model to test its potential moderating role for different levels of parental worklessness. YP indicates Young Person; IMD indicates Index of Multiple Deprivation; KS2 indicates Key Stage 2; and EAO indicates Educational Achievement Orientation.*

Parental education was also significant, although the effects are not monotonic, suggesting that after taking into account individual level characteristics, medium level parental qualifications are associated with reduced time in NEET. In Model 4, the interaction terms were added, suggesting that there was a significant interaction between persistent parental worklessness and EAO. The significant coefficient (b=-.-2.414, p<.000) indicates that young women from persistently workless families who maintained a positive educational achievement motivation were experiencing fewer months of NEET. Furthermore, as for males, adding the interaction term reduced the direct association between parental worklessness and NEET to non-significance. There remain significant independent effects of parental education, housing tenure, and living in an area with high levels of multiple deprivation. There was no significant interaction between temporary parental worklessness and EAO.

Gender differences

In a final step, gender differences in the association between parental worklessness and EAO and the experience of NEET were tested through a differences between slopes test. Regarding the results for the final model (Model 4) in the prediction of EAO, there were significant gender differences for gender and persisting parental worklessness (t=2.60; p<.01), parental education at NVQ4 level (t=260; p<.01), at NVQ3 level (t=3.42; p<.00), NVQ2 level (t=3.22; p<.00) and NVQ1 (t=3.39; p<.00); urban/rural (t-2.41; p<.02), ethnic minority status (t=3.04; p<.00), and previous academic attainment at Key Stage 2 (t=3.00; p<3.00). Similar patterns are observed for Model 2-3. In Model 1 and 2 however, there are no significant gender differences regarding the experience of parental worklessness. The findings suggest that males living with persistent workless parents, those living in urban areas, those with ethnic minority status, and those who achieved high key stage 2 scores report higher levels of EAO than females in similar circumstances, while boys with less than degree level educated parents report lower EAO than girls in similar circumstances, except for those whose parents have no qualifications at all.

Regarding the experience of NEET, significant gender differences are only found for living with a single parent (t=2.15; P<.03 in Model 2; t=1.76; P<.08 in Model 3: and t=1.71; P<.09 in Model 4), suggesting that boys growing up with a single parent are slightly more likely to be NEET than females in similar circumstances.

Discussion

Before the Great Recession, about one in ten young people in England grew up with persistently workless parents and one in twenty experienced temporary worklessness of their parents. Worklessness has been defined at the household level, focusing on families in which no parent living in the household was employed. Parental worklessness showed a significant direct association with lower levels of EAO among the offspring as well as a prolonged experience of being NEET between ages 16 to 20 when the UK experienced a major economic downturn. The magnitude of the direct effect of parental worklessness on the experience of NEET among the offspring was moderate and explained only a small amount of variance, which suggests that there might be other potential explanatory factors. Furthermore, the association between parental worklessness and the outcomes under consideration could largely be explained by a number of other socio-demographic factors, in particular low levels of parental education, lack of home ownership, large family size and living in an area characterised by multiple levels of deprivation, pointing towards the role of multiple disadvantage and deprivation rather than worklessness per se.

The association between parental worklessness and the young person being NEET was fully explained after taking into account the interplay of worklessness and EAO. There was a significant interaction between parental worklessness and EAO, where young people growing up in persistent workless households, who expressed high levels of EAO, had a reduced risk of experiencing NEET, after taking into account the potential confounding socio-demographic risk factors and individual characteristics. As suggested in a previous qualitative study (Shildrick et al., 2012), the findings thus do not support the assumption of an inter-generational transmission of 'a culture of worklessness', where values and practices that discourage achievement are passed down from parents to their children. Rather,

the findings suggest that children of workless parents potentially recognize the value of higher education and do not want to repeat the predicament of their parents. Indeed, the majority of young people growing up in workless households aspire to participate in higher education and many want to apply to university. For example, about 75% of males growing up in workless families want to continue in education beyond compulsory school leaving age, compared to 82% of males whose parents were always working. For females, the equivalent percentages are 91% of girls in workless households compared to 93% of girls with working parents. Aspirations towards studying at university were expressed by 42% of males and 58% of females in workless households, compared to 61% of males and 72% of females with working parents.

Regarding EAO, low parental education was a significant independent risk factor diminishing the EAO for both males and females over and above the other variables included in the model.

Regarding the experience of NEET, living in rented accommodation, and living in a highly deprived area were independent risk factors for both males and females, over and above the experience of parental worklessness, other socio-demographic factors and individual characteristics (ethnicity, previous academic attainment and EAO), suggesting the importance of how and where one lives in influencing the experience of NEET (Ainsworth, 2002).

Even though males and females differed regarding the time they were NEET, no significant gender differences in the role of socio-demographic, individual and community factors were found, except that for young males, living with a single parent appears to be an additional independent risk factor for experiencing NEET. This finding potentially points to the lack of economic resources and social networks that can undermine the life chances of young men in particular, especially concerning job search (Ioannides & Loury, 2004). Otherwise the likely risk factors for experiencing NEET appear to be similar for males and females.

There were however, significant gender differences in the association between parental worklessness and EAO – but only after controlling for all the other variables included in the model. Males growing up with persistently workless parents report higher EAO than females, especially if their parents are educated to degree level, if they live in an urban area, are from an ethnic minority background and have good Key Stage 2 attainment. The findings thus suggest that in specific circumstances, the experience of parental worklessness can impel in particular young males to recognize the value of higher education. Possibly, highly educated parents can motivate their children to achieve in education, independent of their own precarious employment situation (see also Mortimer, Zhang, Hussemann, &Wu, this issue). To fully understand the implications of parental worklessness on young males and females, it is thus important to consider the total level of vulnerabilities and different constellations of risk within families.

The study furthermore found significant ethnic differences, with males and females from ethnic minority backgrounds reporting higher levels of EAO than whites, and fewer months being NEET. The study thus confirms previous evidence regarding higher EAOs among ethnic minority children in England (Strand, 2007, 2008). Their higher rates of staying on in full-time education beyond compulsory schooling (Dustmann, Machin & Schönberg, 2010) have been explained by differences in cultural attitudes towards higher education (Torgerson et al, 2008), and the expectation that better qualifications will reduce the effect of possible future racial discrimination in the labour market (Connor, Tyers, Modood, & Hillage, 2004). Generally, this study found that high EAO, as well as high previous academic attainment, can act as protective factors, reducing the risk of being long-term NEET.

There are many strengths of this study, among which are the use of a large scale nationally-representative dataset, and the longitudinal design which allows measurement of the duration of worklessness as well as of NEET. As in most longitudinal studies, the analysis is constrained by having to make best use of the available data, their measurement level and timing. For example, parental worklessness and EAOs were measured before the onset of the Great Recession, and the subsequent education and employment transitions just before and during the economic downturn. It was thus not possible to assess how EAOs responded to the economic downturn. However, the data enabled the

assessment of longer term outcomes associated with parental worklessness and EAO during a period that included a major economic downturn.

Another issue to be addressed is missing data, which might have affected the validity of the results. Although the analytic sample remained largely representative of the population, young people from less privileged family backgrounds were less likely to be included in our analysis. Response bias at the individual level would tend to underestimate the magnitude of effects of social disadvantage, as sample attrition is greatest among cohort members in more deprived circumstances. The problem of missingness in the data was addressed using multiple imputation. Nonetheless, the results might provide a conservative estimate of social inequalities in the sample.

Regarding methodology, this study is one of the first to assess the independent risk effect of parental worklessness on the experience of NEET among males and females. OLS regression models were used to gain a better understanding of how each of the selected variables contributed to the expression of EAO and experience of NEET. Future studies should use Structural Equation Modelling to examine the combined and simultaneous effect of the relevant variables in more detail, and/or Hierarchical Linear Modelling to assess distinct area effects.

In summary, the findings presented here highlight that youth development occurs within a set of interlinked contexts ranging from the macro to the micro level. For a better understanding of young people's experiences in the transition to independent adulthood and the inter-generational transmission of (dis-)advantage, it is important to adopt a developmental-contextual perspective (Schoon, 2006; Vondraceck et al., 1986) and ecological approaches (Bronfrenbrenner, 1986; Elder, 1998) that take into account these multiple influences. The significant role of family socio-demographic factors (in particular low parental education and lack of housing tenure) over and above the experience of parental worklessness in shaping both EAO and experience of NEET highlighted the issue of multiple deprivation, i.e. the accumulation of social and economic disadvantages, as a major factor in reducing the life chances of young people. The findings give only partial support to a policy agenda targeted at workless households per se. They rather point to the need to tackle the wider range of risks that families living in difficult socio-economic circumstances are facing.

The findings also suggest the manifestation of remarkable resilience among the affected young people. There was a significant interaction between persistent parental worklessness and individual EAO, suggesting that individual EAO can potentially act as a resource factor reducing the risk of negative outcomes for young people growing up in disadvantaged circumstances. Special efforts should thus be directed at young people growing up in families facing multiple economic challenges, especially young males, with the aim of raising their EAO, their engagement in education, and removing barriers to employment. This study does, however, only reflect employment experiences of young people between ages 16 to 20, and the observed patterns might not hold for employment related outcomes in the longer run.

Furthermore, the significant role of area characteristics, over and above the experience of parental worklessness and other socio-demographic characteristics, suggests that it matters *where* young people live, and that area characteristics can affect youth development and adjustment. Previous studies have shown that neighbourhood effects are strongest during early childhood and late adolescence (Brooks-Gunn, Duncan & Aber, 1997). This study confirms the importance of area deprivation and points to local opportunities, and potentially also collective socialisation (Ainsworth, 2002; Ioannides & Loury, 2004), which influence the type of role models a young person is exposed to outside the home and thereby shape the education and employment transitions of young people.

Acknowledgements

Earlier versions of this paper were presented at the 2012 Meeting of the Society for Longitudinal and Life Course Studies, Paris. The study is supported by Grant Numbers ES/J019658/1 and ES/J019135/1 from the British Economic and Social Research Council (ESRC) for the Centre for Learning and Life-chances in the Knowledge Economies (LLAKES, Phase II) and the ESRC workshop series on Young People and the Great Recession. The content is solely the responsibility of the author and may not represent the views of the sponsors.

References

Ainsworth, J. W. (2002). Why does it take a village? The mediation of neighborhood effects on educational achievement. *Social Forces, 81*, 117-152. http://dx.doi.org/10.1353/sof.2002.0038

Ashton, D., & Bynner, J. (2011). Labour market, employment and skills. In M. E. J. Wadsworth & J. Bynner (Eds.), *A companion to life course studies. The social and historical context of the British birth cohort studies (*pp. 122-147*)*. London: Routledge.

Beal, S. J., & Crockett, L. J. (2010). Adolescents' occupational and educational aspirations and expectations: Links to high school activities and adult educational attainment. *Developmental Psychology, 46*, 258-265. http://dx.doi.org/10.1037/a0017416

Berthoud, R. (2011) Trends in the employment of disabled people in Britain. *Vol. ISER Working Paper Series, 2011-03*: Institute for Social and Economic Research, University of Essex.

Bradley, R. H., & Corwyn, R. F. (2002). Socioeconomic status and child development. *Annual Review of Psychology, 53*, 371-399. http://dx.doi.org/10.1146/annurev.psych.53.100901.135233

Bradshaw, J., & Mayhew, E. (Eds.). (2005). *The Well-being of Children in the United Kingdom*. London: Save the Children.

Bronfenbrenner, U. (1986). Ecology of the family as a context for human development: Research perspectives *Developmental Psychology 22*, 723-742. http://dx.doi.org/10.1037/0012-1649.22.6.723

Brooks-Gunn, J., Duncan, G. J., & Aber, L. (1997). *Neighborhood Poverty: Context and Consequences for Children*. New York: Russel Sage Foundation.

Coelli, M. B., Green, D. A., & Warburton, W. P. (2007). Breaking the cycle? The effect of education on welfare receipt among children of welfare recipients. *Journal of Public Economics, 91*, 1369-1398.

Collingwood, A., Cheshire, H., Nicolaas, G., D'Souza, J., Ross, A., Hall, J., Armstrong, C., Prosser, A.,Green, R.,Collins, D.,Gray, M.,McNaughton Nicolls, C. . (2010). A review of the Longitudinal Study of Young People in England (LSYPE): Department for Education, Research Report DFE-RR048. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/181703/DFE-RR048.pdf

Connor, H., Tyers, C., Modood, T. and Hillage, J. (2004), *Why the Difference: A closer look at ethnic minority students and graduates*. Research report No. 552. London: DfES.

Crawford, C., Duckworth, K., Vignoles, A., & Wyness, G. (2011). *Young people's education and labour market choices aged 16 to 19.* London: Centre for Analysis of Youth Transitions. http://www.ifs.org.uk/publications/5962o.

Dustmann, C., Machin, S., & Schönberg, U. (2010). Ethnicity and educational achievement in compulsory schooling. *Economic Journal, 120*, F272-F297.

Elder, G. H. (1998). The life course as developmental theory. *Child Development, 69*, 1-12.

Engle, P. L., & Black, M. M. (2008). The Effect of Poverty on Child Development and Educational Outcomes. *Ann NY Acad Sci, 1136*, 243-256.

Ermisch, J., Francesconi, M., & Pevalin, D. J. (2004). Parental partnership and joblessness in childhood and their influence on young people's outcomes. *Journal of the Royal Statistical Society Series a-Statistics in Society, 167*, 69-101.

Erikson, R. (1984). Social class of men, women and families. *Sociology*, *18*, 500-514. http://dx.doi.org/10.1177/0038038584018004003

European Parliament. (2013). *The advantages of a gender-sensitive approach to tackle youth unemployment*. European Parliament. Policy Department. EST92550.pdfo.

European Commission (2014) Eurostat, 2012. http://epp.eurostat.ec.europa.eu/tgm/table.do?tab=table&init=1&plugin=1&language=en&pcode=tps00181

Gottschalk, P. (1996). Is the correlation in welfare participation across generations spurious? *Journal of Public Economics, 63*, 1-25. http://dx.doi.org/10.1016/S0047-2727(96)01585-X

Gregg, P., & Wadsworth, J. (2001). Everything you ever wanted to know about measuring worklessness and polarization at the household level but were afraid to ask. *Oxford Bulletin of Economics and Statistics, 63*, 777-806. http://dx.doi.org/10.1111/1468-0084.63.spe1.9

Gregg, P., Harkness, S., & Machin, S. (1999). Poor Kids: Trends in Child Poverty in Britain, 1968–96 *Fiscal Studies, 20*, 163-187. http://dx.doi.org/10.1111/j.1475-5890.1999.tb00009.x

Gregg, P., & Wadsworth, J. (2008). Two sides to every story: Measuring polarization and inequality in the distribution of work. *Journal of the Royal Statistical Society Series A-Statistics in Society, 171*, 857-875.

Gutman, L. M., Schoon, I., & Sabates, R. (2012). Uncertain aspirations for continuing in education: Antecedents and associated outcomes. *Developmental Psychology, 48*, 1707-1718. http://dx.doi.org/10.1037/a0026547

Harkonen, J. (2011). Children and dual worklessness in Europe: A comparison of nine countries. *European Journal of Population-Revue Europeenne De Demographie, 27*, 217-241. http://dx.doi.org/10.1007/s10680-011-9232-3

Haveman, R. H., & Wolfe, B. (1994). *Succeeding generations: On the effects of investments in children*. New York: Russell Sage Foundation.

Iacovou, M., & Berthoud, R. (2000). *Parents and employment. An analysis of low-income families in the British Household Panel Survey*. London: Stationary Office.

Ioannides, Y. & Loury, L. (2004). Job information networks, neighbourhood effects and inequality. *Journal of Economic Literature*, *42*, 1056-93. http://dx.doi.org/10.1257/0022051043004595

Jencks, C., & Mayer, S. E. (1990). The social consequences of growing up in a poor neighbourhood. In L. E. J. Lynn & M. G. H. McGeary (Eds.), *Inner-city poverty in the United States* (pp. 111-187). Washington, DC: National Academy Press.

Jenkins, S., Brandolini, A., Micklewright, J., & Nolan, B. (2013). *The great recession and the distribution of household income* . Oxford: Oxford University Press.

Johnson, M. K., & Reynolds, J. R. (2013). Educational expectation trajectories and attainment in the transition to adulthood. *Social Science Research, 42*, 818-835. http://dx.doi.org/10.1016/j.ssresearch.2012.12.003

Johnson, P., & Reed, H. (1996). Intergenerational mobility among the rich and poor: Results from the National Child Development Study. *Oxford Review of Economic Policy, 12*, 127-143. http://dx.doi.org/10.1093/oxrep/12.1.127

Kerckhoff, A. C. (1993). *Diverging pathways: Social structure and career deflections*. Cambridge: Cambridge University Press.

Kerckhoff, A. C. (2001). Education and social stratification processes in comparative perspective. *Sociology of Education*, *74*, 3-18. http://dx.doi.org/10.2307/2673250

Leventhal, T., & Brooks-Gunn, J. (2003). Children and youth in neighborhood contexts. *Current Directions in Psychological Science, 12,* 27-31.

Macmillan, L. (2010). *The intergenerational transmission of worklessness in the UK*. Bristol: The Centre for Market and Public Organisation (CMPU).

Macmillan, L. 2011). *Measuring the intergenerational correlation of worklessness* Bristol: Bristol Institute of Public Affairs, University of Bristol, Working Paper No. 11/278. http://www.bristol.ac.uk/cmpo/publications/papers/2011/wp278.pdf

Macmillan, L. (2014). Intergenerational worklessness in the UK and the role of local labour markets. *Oxford Economic Papers Advance Access.* http://oep.oxfordjournals.org/content/early/2014/02/05/oep.gpt046.short?rss=1

Marjoribanks, K. (1989). Environments, adolescents' aspirations and young adults' status attainment. *Educational Studies, 15*, 155-164. http://dx.doi.org/10.1080/0305569890150206

McLanahan, S. (1997). Parent absence or poverty: Which matters more? In G. J. Duncan & J. Brooks-Gunn (Eds.), *Consequences of growing up poor* (pp. 35-48). New York: Russell Sage Foundation.

McLanahan, S. (2004). Diverging destinies: How children are faring under the second demographic transition. *Demography, 41*, 607-627. http://dx.doi.org/10.1353/dem.2004.0033

McLanahan, S., & Sandefur, G. (1994). *Growing up with a single parent: What hurts, what helps?* Cambridge, MA: Harvard University Press.

Mello, Z. R. (2008). Gender variation in developmental trajectories of educational and occupational expectations and attainment from adolescence to adulthood. *Developmental Psychology, 44*, 1069-1080. http://dx.doi.org/10.1037/0012-1649.44.4.1069

Mortimer, J.T., Zhang, L., Hussemann, J., & Wu, C-Y. (2014). Parental economic hardship and children's achievement orientations. *Longitudinal and Life Course Studies, 5*, 105-128. http://dx.doi.org/10.14301/llcs.v5i2.271

Murry, V. M., Berkel, C., Gaylord-Harden, N. K., Copeland-Linder, N., & Nation, M. (2011). Neighborhood Poverty and Adolescent Development. [Article]. *Journal of Research on Adolescence, 21*, 114-128.

ONS. (2011). Working and workless households. *Office for National Statistics. Statistical Bulletin* http://www.ons.gov.uk/ons/dcp171778_229480.pdf.

ONS. (2012). *Characteristics of young unemployed people*: Office for National Statistics. http://www.ons.gov.uk/ons/dcp171776_256894.pdf

O'Neill, D., & Sweetman, O. (1998). Intergenerational mobility in Britain: Evidence from unemployment patterns. *Oxford Bulletin of Economics and Statistics, 60*, 431-449. http://dx.doi.org/10.1111/1468-0084.00108

Pemberton, S. (2008). Tackling the NEET generation and the ability of policy to generate a 'NEET' solution - evidence from the UK. *Environment and Planning C-Government and Policy, 26*, 243-259. http://dx.doi.org/10.1068/c0654

Platt, L. (2010). Ten year transitions in children's experience of living in a workless household: Variations by ethnic group. *Population Trends, 139,* 70-90. http://dx.doi.org/10.1057/pt.2010.6

Reynolds, J. R., & Burge, S. W. (2008). Educational expectations and the rise in women's post-secondary attainments. *Social Science Research, 37*, 485-499. http://dx.doi.org/10.1016/j.ssresearch.2007.09.002

Reynolds, J. R., & Pemberton, J. (2001). Rising college expectations among youth in the United States - a comparison of the 1979 and 1997. US National Longitudinal Study of Youth. *Journal of Human Resources, 36*, 703-726. http://dx.doi.org/10.2307/3069639

Royston, P., Carlin, J. B., & White, R. R. (2009). Multiple imputation of missing values: New features for mim. *Stata Journal, 9*, 252-264.

Rubin, D. B. (1996). Multiple imputation after 18+ years. *Journal of the American Statistical Association, 91*, 473-489. http://dx.doi.org/10.1080/01621459.1996.10476908

Rutter, M. (1981). Stress, coping and development - some issues and some questions. *Journal of Child Psychology and Psychiatry and Allied Disciplines, 22*, 323-356. http://dx.doi.org/10.1111/j.1469-7610.1981.tb00560.x

Rutter, M. (2009). Understanding and testing risk mechanisms for mental disorders. *Journal of Child Psychology and Psychiatry, 50*, 44-52. http://dx.doi.org/10.1111/j.1469-7610.2008.01976.x

Schneider, B., & Stevenson, D. (1999). *The ambitious generation: America's teenagers, motivated but directionless*. New Haven: Yale University Press.

Schoon, I. (2006). *Risk and resilience: Adaptations in changing times.* Cambridge: Cambridge University Press. http://dx.doi.org/10.1017/CBO9780511490132

Schoon, I. (2010). Planning for the future: Changing education expectations in three British cohorts. *Historical Social Research-Historische Sozialforschung, 35*, 99-119.

Schoon, I., Barnes, M., Parsons, S., Brown, V., Ross, A., & Vignoles, A. (2012). *Intergenerational transmission of worklessness: Evidence from the millennium cohort and the longitudinal study of young people in england.* Department for Education. DFE-RR-234. https://www.education.gov.uk/publications/eOrderingDownload/DFE-RR234.pdf

Schoon, I., Martin, P., & Ross, A. (2007). Career transitions in times of social change. His and her story. *Journal of Vocational Behavior, 70*, 78-96. http://dx.doi.org/10.1016/j.jvb.2006.04.009

Schoon, I., & Parsons, S. (2002). Teenage aspirations for future careers and occupational outcomes. *Journal of Vocational Behavior, 60*, 262-288. http://dx.doi.org/10.1006/jvbe.2001.1867

Sewell, W. H., Haller, A. O., & Ohlendorf, G. W. (1970). The educational and early occupational status attainment process: Replication and revision. *American Sociological Review, 35*, 1014-1027. http://dx.doi.org/10.2307/2093379

Sewell, W. H., & Hauser, R. M. (1975). *Education, occupation, and earnings: Achievement in the early career*. New York: Academic Press.

Sewell, W. H., Hauser, R. M., & Wolf, W. C. (1980). Sex, schooling, and occupational status. *The American Journal of Sociology, 86*, 551-583. http://dx.doi.org/10.1086/227281

Shildrick, T., MacDonald, R., Furlong, A., Roden, J., & Crow, R. (2012). *Are 'cultures of worklessness' passed down the generations?* York: Joseph Rowntree Foundation. http://www.jrf.org.uk/sites/files/jrf/worklessness-families-employment-full.pdf

Strand, S. (2007). *Minority ethnic pupils in the Longitudinal Study of Young People in England (LSYPE)*. London: Department for Children, Schools and Families (DCSF). Research Report No RR002.

http://webarchive.nationalarchives.gov.uk/20130401151715/https://www.education.gov.uk/publications/eOrderingDownload/DCSF-RR002.pdf
Strand, S. (2008), *Minority Ethnic Pupils in the Longitudinal Study of Young People in England.* Report DCSF-RR029. London: Department for Children, Schools and Families.
Such, E., & Walker, R. (2002). Falling behind? Research on transmitted deprivation *Benefits, 35*, 185-192.
Torgerson, C., Gorard, S., Low, G., Ainsworth, H., See, B. H. and Wright, K. (2008), *What are the factors that promote high post-16 participation of many minority ethnic groups?: A focused review of the UK-based aspirations literature*. Institute of Education, Social Science Research Unit, University of London. Evidence for Policy and Practice Information and Co-ordinating Centre . http://eppi.ioe.ac.uk/cms/Default.aspx?tabid=2386
Vondracek, F. W. (1998). Career development: A lifespan perspective. *International Journal of Behavioral Development, 22*, 1-6. http://dx.doi.org/10.1080/016502598384487
Vondraceck, F. W., Lerner, R. M., & Schulenberg, J. E. (1986). *Career development: A life-span developmental approach.* Hillsdale, NJ: Erlbaum.
Vuolo, M., Staff, J., & Mortimer, J. T. (2012). Weathering the great recession: Psychological and behavioral trajectories in the transition from school to work. *Developmental Psychology, 48*, 1759-1773. http://dx.doi.org/10.1037/a0026047
Webster, D. (2000). The geographical concentration of labour market disadvantage. *Oxford Review of Economic Policy, 16*, 114-128. http://dx.doi.org/10.1093/oxrep/16.1.114

Endnotes

[i] General Certificate of Secondary Education (GCSE): a public examination in specified subjects given at the end of key stage 4 for 16 year-olds in England which is part of the National Qualifications Framework. Candidates receive a grade for each subject that they have sat. The pass grades, from highest to lowest, are: *A** (pronounced 'A-star'), *A*, *B*, *C*, *D*, *E*, *F* and *G*. Grade *U* (ungraded/unclassified) is issued when students have not achieved the minimum standard to achieve a pass grade; the subject is then not included on their final certificate. A GCSE at grades D–G is a Level 1 qualification, while a GCSE at grades A*–C is a Level 2 qualification. As one would expect, GCSEs at A*-C (Level 2) are much more desirable and insisted on by many employers and educational institutions. Level 1 qualifications are required to advance to Level 2 qualifications. Likewise, Level 2 qualifications are required to advance to Level 3 qualifications.

[ii] A Key Stage is a stage of the state education system in England, Wales and Northern Ireland. Key Stage 2 reflects attainment at the later stage of primary education, often known as junior schools.

Parental worklessness and the experience of NEET among their offspring. Evidence from the Longitudinal Study of Young People in England (LSYPE)

Ingrid Schoon
Institute of Education, University of London
I.Schoon@ioe.ac.uk

(Received December 2013 Revised April 2014) http://dx.doi.org/10.14301/llcs.v5i2.279

Abstract

This paper examines the assocations between parental worklessness and the experiences of their offspring making the transition from school to work during a time that included a major economic downturn. The study draws on data collected for the Longitudinal Study of Young People in England (LSYPE), a cohort of young people born in 1989/90 completing compulsory education in 2006 – just before the onset of the Great Recession. Data on parental worklessness collected between 2004 and 2006 was linked to information about subsequent employment activities of their offspring, in particular the experience of not being in education, employment or training (NEET) between 2007 and 2010 (ages 16 to 20 years). Parental worklessness was significantly associated with their sons' and daughters' experience of being NEET for longer periods of time (months spent in NEET). However, much of this association was explained by a number of other socio-economic risks facing these young people and their families (e.g. low parental education level, living in rented accommodation and in highly deprived neighbourhoods). Furthermore, the role of individual agency, in particular educational achievement orientation (EAO) as a potential mediator was examined. Although parental worklessness was associated with lower levels of EAO, especially among young males, the findings also suggest that EAO can serve as a potential resource for young men and women in adverse economic circumstances. The study does not support the assumption of an inter-generational transmission of a 'culture of worklessness' but points to the role of multiple deprivations and lack of local opportunities in shaping the life chances of young people.

Keywords: worklessness, inter-generational, socio-economic resources, achievement orientation, gender

Introduction

The existing literature suggests that growing up in a workless household can have adverse long-term effects regarding academic and occupational attainment (Ermisch, Francesconi, & Pevalin, 2004), yet the specific issue of inter-generational transmission of worklessness is less well studied, especially in the UK context (Macmillan, 2010; 2011; 2014). Furthermore, there is relatively little understanding of the processes linking the transmission of worklessness from one generation to the next. Indeed the idea that worklessness can be in part explained through familial transmission of values and practices has been called into question (Shildrick, MacDonald, Furlong, Roden, & Crow, 2012). The aims of this paper are to: a. examine the inter-generational link between parental worklessness and a young person's likelihood of being *Not in Education, Employment or Training* (NEET) during a time that included a major economic downturn; b. examine gender differences in the association; and c. assess the role of achievement orientations as a potential mediating mechanism, focusing in particular on educational

aspirations and expectations of young people growing up with workless parents. Drawing on evidence collected for the Longitudinal Study of Young People in England (LSYPE), employment experiences of young people are assessed between ages 16 to 20, after the completion of compulsory schooling, using evidence from a general population sample. The study is guided by a developmental-contextual perspective (Schoon, 2006; Vondraceck, Lerner, & Schulenberg, 1986; Vondracek, 1998), informed by ecological approaches to human development (Bronfenbrenner, 1986; Elder, 1998) that emphasize multiple interacting influences embedded in a wider socio-historical context.

School-to-work transitions in times of economic downturn

The effects of an economic recession are felt most keenly by young people embarking on the transition to adult life (Ashton & Bynner, 2011; Jenkins, Brandolini, Micklewright, & Nolan, 2013). Even if the most critical phase of the recession has passed, there can be long-term and lasting consequences, raising the spectre of a 'lost generation'. Recessionary times are likely to limit employment prospects, and lead to less successful transitions to adulthood (Vuolo, Staff, & Mortimer, 2012). In England and the rest of the UK, the number of young people who are out of work has risen between 2008 and 2011 to its highest level on record (ONS, 2012) and currently one in five people aged 16 to 24 years are looking for work.

In this paper the association between growing up with workless parents and the likelihood of experiencing NEET among their offspring is assessed, as well as gender differences in this association, which are largely ignored in current debates (European Parliament, 2013). The crisis has worsened labour market conditions especially for young men, since male-oriented sectors, in particular manufacturing and construction, were hit first and hardest by the economic slow-down. In the UK the unemployment rate among young males is currently higher than among females, as is the rate of NEET (ONS, 2012). The experience of NEET can be considered as a more comprehensive indicator of hardship than the unemployment rate, as it includes those young people who do not have a job, are not enrolled in training, or are not classified as a student.

Inter-generational transmission of worklessness

The existing literature suggests that growing up in a jobless household can have adverse long-term effects (Ermisch et al. 2004), and has been found to be associated with lower levels of later educational and occupational attainment (McLanahan & Sandefur, 1994; Haveman & Wolfe, 1994; Kiernan, 1997; Schoon et al., 2012) and persistent dependence on social security benefits (Gottschalk, 1996; Iacovou & Berthoud, 2000; Such & Walker, 2002). As adults, children growing up in poor or workless households are more likely to be workless or poor themselves, as compared to children who grow up in households where someone is employed (Gregg, Harkness & Machin, 1999; Such & Walker, 2002). Likewise, evidence on the experiences of children growing up in workless households across Europe suggests that parents' labour market status strongly predicts children's economic well-being, and that children living in households with no employed adults are particularly vulnerable to the experience of income poverty (Harkonen, 2011).

With rising unemployment rates there is now increasing concern about generations of families who have never worked (Coelli, Green, & Warburton, 2007; Ermisch et al., 2004; Gregg & Wadsworth, 2008; Harkonen, 2011; Pemberton, 2008; Platt, 2010) and about the potential scarring effects of household worklessness on the future labour market experiences of contemporary children (Macmillan, 2010; 2011). The United Kingdom has an above average proportion of adults living in workless households compared to the European Union, and also a higher proportion of dependent children living in workless households (European Commission, 2014). Thirteen percent of households with dependent children were workless in the second quarter of 2011, which equates to just over one million workless households with dependent children (ONS, 2011). The question of inter-generational transmission of worklessness is thus obviously of high importance.

There is some evidence that worklessness is transmitted inter-generationally (see Macmillan (2010) for a review), although most studies focused on the transmission from father to son. For example, in the UK context, evidence from the 1958 National Child Development Study (NCDS) suggests that 19% of

sons who experienced a year or more out of work between the ages 23-33 had had a father out of work at age 16, compared to the sample average of 10% (Johnson & Reed, 1996; see also O'Neill & Sweetman , 1998). Macmillan (2010) examined the magnitude of the inter-generational correlation of worklessness using the NCDS and the 1970 British Cohort Study (BCS) and found sons were over twice as likely to experience workless spells themselves if they came from a family where the father experienced worklessness during their childhood. Furthermore, the relationship remained strong, even after controlling for a range of family background characteristics, and the inter-generational correlation in worklessness appears to have increased for the later-born cohort. There is also evidence to suggest that the inter-generational effect depends on conditions of the local labour market, i.e. that it is stronger in labour markets with high unemployment rates (Macmillan, 2011, 2014).

The association between parental worklessness and young peoples' experience of NEET has also been confirmed in a recent study using LSYPE (Schoon et al., 2012), although gender differences in this association were not examined. Furthermore, there is little evidence regarding the *processes* that link parental worklessness to young people's outcomes. The motivation for this research is therefore to obtain a better understanding of gender differences in the association between parental worklessness and the likelihood that a young person will experience NEET, and to gain a better understanding of potential mediating processes and confounders.

Educational achievement orientation (EAO) as a potential mediator

The level of educational qualifications is particularly important in influencing the probability of being NEET, especially among women. Those with higher level qualifications are less likely to experience NEET, or are NEET for a shorter duration (Crawford, Duckworth, Vignoles, & Wyness, 2011). One aim of this study is therefore to assess the role of EAO as a potential mediating process. Is there a significant association between parental worklessness and the EAO of young people? Is the impact of parental worklessness on the employment experiences of their offspring mediated by the child's expression of educational optimism and expectations to participate in higher education?

The importance of educational aspirations as a powerful mediator of the effects of parental socio-economic status on career progression and attainment is well established. Traditional status attainment research has shown that parents of higher socio-economic status have higher aspirations for their children, which are associated with higher aspirations among their offspring (Sewell & Hauser, 1975; Sewell, Hauser, & Wolf, 1980). High child aspirations, in turn, are associated with later academic and career success – a finding which has been consistently confirmed in different cultural and historical contexts (Beal & Crockett, 2010; Johnson & Reynolds, 2013; Kerckhoff, 1993; Kerckhoff, 2001; Schoon & Parsons, 2002; Sewell, Haller, & Ohlendorf, 1970) and for men and women (Mello, 2008; Schoon, Martin, & Ross, 2007; Sewell, Hauser, & Wolf, 1980). Furthermore, future-oriented aspirations can reduce the detrimental effect of parental socio-economic hardship and can be an important resource for young people from disadvantaged backgrounds to achieve against the odds (Schoon, 2006).

There is little understanding of the role of EAOs in the inter-generational transmission of worklessness. Furthermore, educational aspirations and expectations have generally increased considerably in recent years (Reynolds & Pemberton, 2001; Schneider & Stevenson, 1999), especially among women (Reynolds & Burge, 2008; Schoon, 2010). Previous evidence also suggests that young males are more susceptible to their parent's socio-economic situation than females, and that socio-economic hardship is associated with lower aspirations among males than females (Schoon et al., 2007; see also Mortimer, Zhang, Hussemann & Chen-Yu, this volume). Generally the mechanisms linking parental worklessness to their children's outcomes are not well understood. A recent review of the evidence in the UK contexts suggests that there is little evidence to suggest that 'cultures of worklessness' are passed down the generations via low education and work related values (Shildrick et al., 2012). Nonetheless raising aspirations of young people and involvement in higher education have been identified as ways of addressing inter-generational issues in the trans-

mission of worklessness (Pemberton, 2008), and the role of EAO will thus be examined in this study.

Confounding factors

There is a fundamental concern that the estimated effects of parental worklessness might be spurious, due to the association with other problematic circumstances (Ermisch et al., 2004; Schoon et al., 2012). It is therefore necessary to take into account potential confounders. In particular, this analysis will control for characteristics of the family, the wider social context, as well as characteristics of the young person, including ethnic background and previous academic attainment.

Factors considered here include socio-demographic family characteristics, family structure, housing conditions, and health, as well as area deprivation (Haveman & Wolfe, 1994; Iacovou & Berthoud, 2000; McLanahan, 1997, 2004). Parental worklessness is increasingly concentrated in certain subgroups of the population and in certain geographic areas (Gregg & Wadsworth, 2001; Macmillan, 2014). For example, single adult households are far more likely to be workless than households with two adults (both with and without children), and workless households are significantly more likely to experience poverty than households in which at least one adult is employed (ONS, 2011). Comparing poverty rates of children in jobless households in Europe, Harkonen (2011) found that in the UK and Ireland these were higher than the average in other countries, reaching above 50%. Furthermore, disability strongly affects work rates (Berthoud, 2011), and worklessness is more prevalent in urban areas and the North of England (Webster, 2000). Hence it is important to allow for these other risk factors when modelling the relationship between parental worklessness and outcomes.

Socio-economic family hardship, characterised by worklessness, low income, low levels of education, lone parenthood, large families living in rented accommodation, and parental ill health, create a context that affects young people's development and adjustment. There is consistent evidence on the harmful effects of growing up in circumstances in which families are unable to provide the experiences, resources and services that are crucial for young people to thrive (Bradley & Corwyn, 2002; Bradshaw & Mayhew, 2005; Engle & Black, 2008). Moreover, previous research suggests that where one lives matters, in terms of quality of family life and life opportunities. Living in a disadvantaged neighbourhood, especially in urban areas, has been associated with lower levels of academic performance and EAO (Ainsworth, 2002; Brooks-Gunn, Duncan, & Aber, 1997; Jencks & Mayer, 1990; Murry, Berkel, Gaylord-Harden, Copeland-Linder & Nation, 2011).

Certainly the existing evidence suggests that the relationship between any single risk factor and subsequent outcomes tends to be weak. Usually many risks are involved in determining an outcome, and serious risk emanates from the accumulation of risk factors (Garmezy, 1991; Rutter, 1981, 2009). The analysis will thus control for a number of potentially interlinked risk factors (such as family demographics, household income, family structure, parental health, home ownership and number of siblings living in the household, as well as area deprivation) that might explain the association between parental worklessness and the experience of NEET among their offspring. Furthermore, individual factors that have been shown to be associated with EAO of young people are taken into account, in particular the young person's ethnicity and previous academic attainment. Previous academic attainment has been shown to influence the education aspirations and expectations of young people and those of their parents (Gutman, Schoon & Sabates, 2012; Marjoribanks, 1989; Schoon, 2010). Furthermore, in the current UK context, young people from ethnic minority background express higher educational aspirations than whites (Gutman et al., 2012; Strand, 2007, 2008), which has been attributed to differences in cultural attitudes towards higher education (Torgerson et al., 2008).

Moreover, the analysis will take into account the duration of parental worklessness. Most previous studies have conceptualised worklessness as a state, without taking into account that households may be moving in and out of worklessness over time. This study thus adds to previous research by assessing the relationship between repeated (or persistent) versus temporary parental worklessness, differentiating between families who never experienced worklessness during the period of observation, those who moved in and out of worklessness, and those who were persistently workless at several (at least three)

subsequent years of observation. Furthermore, the duration of NEET experienced by young people is taken into account, examining the number of months spent in NEET between ages 16 to 20 (between September 2006 and May 2010).

Research questions and hypotheses

Based on previous evidence this study is guided by four hypotheses:

1. Parental worklessness, in particular the repeated experience of worklessness, increases the likelihood that their offspring will experience NEET for longer periods. This association is expected to hold even after controlling for the confounding factors.
2. Given the lack of prior research evidence regarding gender differences in the association between parental worklessness and NEET, no assumptions about the direction of the effects are specified.
3. It is assumed that the effect of parental worklessness on young people's experience of NEET is mediated by the EAO of the young person, i.e. their aspirations and expectations regarding participation in higher education.
4. As there is little evidence on gender differences in the role of aspirations as mediators between parental worklessness and employment experiences of their offspring, no assumptions about the direction of effects are specified. In contemporary cohorts women have higher education aspirations than men, especially young women from less privileged backgrounds compared to men in similar circumstances (Schoon, 2010). Thus, EAOs could play a stronger role for women, although the effect of achievement orientation on outcomes could be diluted when more women have high ambitions.

The study will contribute to the literature in multiple ways: first, experiences of a current cohort of young people are examined to assess the extent of inter-generational transmission of worklessness; second, gender differences in the association between parental worklessness and the long-term experience of NEET are assessed; third, the role of EAO as potential mediators of this association is tested; fourth, longitudinal data is used to examine the duration of parental worklessness as well as the experience of NEET among young people; and fifth, a number of confounding factors are taken into account in assessing the independent effects of parental worklessness on EAOs and employment outcomes.

Method

Data

The study is based on data collected for the Longitudinal Study of Young People in England (LSYPE). LSYPE is a panel study of 15,770 young people born between 1st September 1989 and 31st August 1990. Sample members were all young people in school year 9 (age 14) or equivalent, in England in February 2004. LSYPE oversampled ethnic minorities and special design weights are used in the analysis (for more details see https://www.education.gov.uk/ilsype/workspaces/public/wiki/Welcome).

Annual face-to-face interviews have been conducted with young people and their parents since 2004, and linkage is available to other administrative data, such as the National Pupil Database (NPD), which includes national assessments for all children in England. From LSYPE, information from Wave 1 to Wave 7 of the dataset was used, covering ages 14 to 20 years. From NPD, a national assessment given at age 11 is used as an indicator of previous academic performance.

Analytic sample

As all longitudinal studies, LSYPE experienced sample loss between the multiple waves. The analytic sample used for this study comprises individuals with complete data on parental worklessness and own employment histories between ages 16 to 20. This provided a sample of 5137 males and 4742 females. The sample is largely representative of the original sample, although there is some greater socioeconomic disadvantage among young people who did not continue in the study. Special sample weights, which are calculated and available from the LSYPE website, were applied to account for differential selection probabilities and non-response bias.

Measures

Parental worklessness

Information on parental employment status was collected annually between 2004 and 2006. Parental worklessness was assessed at the household level (not the individual level). Analyses using individual level data on unemployment rather than household data on worklessness have reached very different conclusions, even when using the same sources of information (Gregg & Wadsworth, 2001). For example, while individual workless rates have fallen over the last twenty years, household workless rates have not, suggesting growing inequality in the distribution of work across households.

A workless family was defined as a family in which no parent living in the household was working at the time the family was interviewed (comprising those who were looking for work, as well as those who were economically inactive, not looking for work because of health problems, disability, or looking after the family). It was only considered whether or not the parents in the household were working. There may have been other employed individuals in the household, such as grandparents or older siblings.

Using the data longitudinally allowed us to identify families where parents:

- were never workless at any of the three assessment points (*continuously working*)
- moved in and out of worklessness (*temporary worklessness*)
- were workless over the three (LSYPE) assessment points (*persistent worklessness*).

It cannot be assumed that the families that were identified as persistent workless were indeed workless throughout the whole period under consideration as the families were not observed continuously and there might have been some fluctuation in family and household circumstances. The discussion of persistent worklessness is therefore subject to this caveat.

NEET

Information on young people's activity status between ages 16-20 years is based on monthly activity history data collected as part of the study. The measure of NEET used in this paper thus gives an indication of the total number of months in NEET between ages 16 to 20 (September 2006 to May 2010). It can range from 0 to 45 months.

Family demographics

Parental education. Information on mother's and father's highest educational level were gathered at Wave1, and were coded into six categories using the National Vocational Qualification (NVQ) levels: 1= no qualifications; 2 = qualifications at level 1, equivalent to five GCSEs[i] at grades D to G; 3 = qualifications at level 2, equivalent to seven GCSEs at grades A to C; 4 = qualifications at level 3, equivalent to three and a half A levels which enables access to University; 5 = higher qualifications not at degree level; 6 = degree level qualifications. The highest level of either parent was used in the analysis, following the dominance approach (Erikson, 1984). *Lone parent family.* Measured at Wave1 in the LSYPE, this variable is coded as 1 if the young person lives in a lone parent family and 0 if two parents are present. *Teen parent*. This variable is coded 1 if the cohort member was born to a teen mother and 0 otherwise. *Home ownership* in Wave 1 is coded as 1 if the family owns their own home and 0 if they are renting. *Number of siblings* comprises a measure of how many siblings the young person has. *Gross household income* was reported by the main parent at wave 1. The banded information was dichotomised to differentiate between those in the lowest income group (less than £10,400 per annum) against others. *Long standing illness or disability in the family* was reported by the parent at wave 1 and is coded 1 if either parent reported a long standing illness or disability and 0 if not.

Area characteristics. The *Index of Multiple Deprivation (IMD)* was measured at wave 1 to provide a relative measure of deprivation at the small area level across England. The IMD is made up of seven constituent domains comprising income, employment, education, crime, health deprivation and disability; barriers to housing and services deprivation; and living environment deprivation (for more details see http://data.gov.uk/dataset/index-of-multiple-deprivation). Areas are ranked from least deprived to most deprived, on an overall composite measure of multiple deprivation. Another source of geographic information is the urban/rural classification in LSYPE, a measure developed by the Department for Environment Food and Rural Affairs (Collingwood et al., 2010).

Rurality of an area was coded as 0, contrasting it to urban areas or towns coded as 1. Information on rurality and multiple area deprivation provide important contextual information regarding the communities that study members are growing up in.

Characteristics of the Young Person

Ethnicity. The ethnicity of the adolescent was coded as (0) white, versus (1) other ethnic groups. Given the ethnic diversity in England, the different ethnic groups were too numerous and the number of each group was too small to examine differences among the groups individually in our model.

Academic performance at age 11. Academic performance was calculated using a latent variable comprising maths, english and science scores in national curriculum tests given at the end of Key Stage 2 (i.e., age 11) [ii].

Educational Achievement Orientation (EAO). An EOA measure was created, comprising 3 indicators of educational aspirations and expectations. The young people were asked, in Wave 3, whether they wanted to stay on in post-compulsory schooling. *YP wants to stay on post-16* is coded 1 when the individual plans to stay on and 0 when they intend to leave. The young people were also asked about their *intention to apply for university* and the *likelihood of getting into university* if they apply. Both questions were coded on a 4-point scale with response options 1=very likely, 2=likely, 3=not likely, and 4 =not at all likely. The three items were combined into a measure of EAO using principal component analysis, and saving the factor score for further analysis. The internal consistency of the 3-item scale is satisfactory (α=.70) and the three items load well on one underlying dimension (ranging from .61 for higher education aspiration, .87 for intention to apply for university and .85 for the likelihood to be accepted) explaining about 63% of the variance. A higher score indicates higher levels of EAO.

Statistical analysis

All analyses were carried out using the software packages SPSS20 and STATA12. Separate models were run for males and females following the assumption that EAO and NEET are experienced differently by men and women. To test our assumptions stepwise OLS regression models were used to assess the independent effects of parental worklessness, additional socio-demographic factors, and individual characteristics. Gender differences were assessed using X^2- tests, t-tests and differences between slopes tests.To account for missingness in the data, multiple imputation was applied. STATA 12 implements chained equations (MICE) which can handle variables of different measurement types. It is a principled, simulation-based approach for analyzing incomplete data. The objective is not to predict missing values as close as possible to the true ones, but to handle missing data in a manner that results in valid statistical inference, correcting for measurement error in the data (Royston, Carlin, & White, 2009; Rubin, 1996). Twenty data sets were imputed for the analytic sample. The estimates from the imputed datasets are combined, or pooled, to generate a single set of estimates.

Results

Table 1 gives the descriptive statistics for all the measures used in the study. The majority of young people grew up in a working household, about 5% experienced temporary worklessness of their parents, and about 10% experienced persistent worklessness over the three observation points 2004-2006. There were no gender differences in the frequencies of the demographic variables. Females, however, had higher levels of academic attainment at age 11 ($p < .001$), their EAO was higher than that of boys ($p<.001$), and they experienced fewer months NEET than males ($p<.001$).

Table 1. Descriptive statistics (weighted)

	Males (n=5,137)	Females (n=4,742)	All n=9,879)	Gender differences
Parental worklessness				n.s.
Always working	85.9	86.0	85.9	
Temporary worklessness	4.8	5.7	5.2	
Persistent worklessness	9.3	8.3	8.8	
Additional Risk Factors				
Parental education				n.s.
NCQ5 (degree level)	19.9	19.8	19.8	
NVQ4 (higher education–but below degree level)	17.5	17.6	17.6	
NVQ3 (A-level)	18.5	18.9	18.7	
NVQ2 (GCSE –level)	26.3	26.4	26.4	
NVQ1 (some qualifications)	7.7	7.7	7.7	
No qualifications	10.1	9.5	9.8	
Teenaged mother at birth	5.8	5.4	5.6	n.s.
Single parent household	21.1	21.7	21.4	n.s.
Number of siblings (none)	14.0	14.2	14.1	n.s.
1	45.4	45.1	45.3	
2	25.9	26.6	26.2	
3+	14.7	14.1	14.4	
Home ownership	77.4	78.2	77.8	n.s.
Gross household income				
Less than £10,400	13.8	14.4	14.1	n.s.
Long-standing illness/disability in the family	19.0	19.5	19.2	n.s.
Urban/rural	88.7	87.9	88.3	n.s
IMD (mean)	20.8	20.5	20.6	n.s.
Characteristics of Young Person				
YP ethnicity minority	10.6	11.0	10.8	n.s.
Previous academic attainment at KS2 (age 11), mean [std])	26.92 [4.33]	27.30 [3.98]	27.11 [4.17]	p<.001
EAO (age 16, mean [std])	-.24 [1.10]	.06 [.92]	.10 [1.03]	p<.000
NEET				
NEET Total months (Sept 2006 to May 2010) - mean [std]	3.5 [7.25]	3.1 [7.28]	3.3 [7.26]	p<.003

Note. YP indicates Young Person; IMD indicates Index of Multiple Deprivation; KS2 indicates Key Stage 2; and EAO indicates Educational Achievement Orientation.

The association between parental worklessness and young people's EAO

Stepwise OLS regression models were used to assess the direct association between parental worklessness and EAO (Model 1). In a next step the socio-demographic confounders were added to the model (Model 2) to assess the independent association between parental worklessness and EAO, over and above the control variables. Model 3 then included the individual characteristics: ethnicity and previous academic attainment at age 11 (Key Stage 2). Model 4 adds interaction terms between temporary and persistent worklessness and academic attainment at age 11.

Table 2 presents the OLS unstandardized coefficients and standard errors for males. Model 1 in Table 2 shows that parental worklessness had a significant main effect on EAO. Both temporary and persistent parental worklessness are associated with reduced levels of EAO. Adding the control variables to the model considerably reduced the association between parental worklessness and EAO, and for males only the association between persistent worklessness and EAO remained significant (Model 2). The findings suggest that much of the association between parental worklessness and achievement motivation (in particular regarding temporary worklessness) can be explained by the socio-demographic family characteristics included in the model. There were independent risk effects from low parental education (less than degree level education), having a young mother and many siblings. Home ownership, higher levels of household income and living in an urban area were associated with higher levels of achievement motivation. Model 3 added the individual level variables, which also showed independent effects: young men from ethnic minority backgrounds expressed higher EAO than white males, as did males who performed well in the Key Stage 2 assessments. Independent risk effects in Model 3 are apparent for low levels of parental education and household income. Adding the individual level variables led to a change in sign of the association between parental worklessness and EAO, suggesting a statistical suppression. That is, it is likely that parental worklessness is associated with poorer academic attainment, which would reduce EAO. Maybe children of workless parents recognize the value of higher education to avoid their parents' plight and aim high regarding their own education participation.

Adding interaction terms between temporary and persistent parental worklessness and previous academic attainment to the model (Model 4), provides further information about the inter-relations of academic achievement and worklessness. In this specification, the coefficient for previous academic attainment indicates its effect for the reference group, always working: .116 ($p<.05$). The interaction terms represent the differences between this academic achievement effect and that for children of the temporarily workless and persistently workless respectively. For example, for children of persistently workless parents, the effect of academic achievement is .056 (.116 - .060=.056). Thus, children from persistently, as well as temporarily workless families would still benefit from high levels of achievement regarding their EAO , but not as much as those from working families.

Table 3 presents the OLS unstandardized coefficients and standard errors for females, using the same modelling strategy as above. Model 1 in Table 3 shows that parental worklessness had a significant main effect on EAO. Both temporary and persistent parental worklessness are associated with reduced levels of EAO. Adding the control variables to the model considerably reduced the association between parental worklessness and EAO, and only the association between temporary worklessness and EAO remained significant (Model 2). There were independent risk effects from low parental education (less than degree level education) and having many siblings. Home ownership was associated with higher levels of achievement motivation. Model 3 added the individual level variables, which also showed independent effects: young females from ethnic minority background expressed higher EAO than white females, as did females who performed well in the Key Stage 2 assessments. In Model 3, only parental education and home ownership retained significant independent effects. For females the interaction terms between temporary and persistent parental worklessness and previous academic attainment were also significant (Model 4), suggesting a similar pattern as for males, i.e., the benefit of high academic achievement regarding EAO is significant, yet reduced under conditions of worklessness.

Table 2. Predicting young person's EAO – MALES (unstandardised OLS regression coefficients)

	Model 1 Coefficient (Std. Error)	**Model 2** Coefficient (Std. Error)	**Model 3** Coefficient (Std. Error)	**Model 4** Coefficient (Std. Error)
Parental worklessness				
Always working (ref)				
Temporary worklessness	-.375* (.077)	-.026 (.089)	.032 (.087)	.985* (.391)
Persistent worklessness	-.365 * (.051)	-.213* (.072)	.277* (.068)	1.739* (.274)
Additional Risk Factors				
Parental education				
NCQ5 (degree =ref)				
NVQ4		-.546* (.051)	-.356* (.047)	-.343* (.047)
NVQ3		-.772* (.054)	-.540* (.049)	-.519* (.049)
NVQ2		-.905* (.048)	-.591* (.046)	-.567* (.047)
NVQ1		-1.153* (.077)	-.722* (.076)	-.697* (.076)
No qualifications		-.835* (.072)	-.516* (.071)	-.524* (.070)
Teenaged mother at birth		-.288* (.077)	-.149 (.079)	-.157$ (.079)
Single parent household		-.059 (.051)	-.063 (.048)	-.062 (.047)
Number of siblings		-.036 # (.017)	-.030 (.017)	-.028 (.017)
Home Ownership		.183* (.052)	.075 (.049)	.077 (.049)
Gross household income		.035#(.012)	.023$ (.011)	.021 (.011)
LS illness/disability in the family		-.083 (.050)	-.072 (.046)	-.067 (.046)
Urban/rural		.127# (.059)	.093 (.054)	.087 (.054)
IMD		-.001 (.001)	-.000 (.001)	-.000 (.001)
Characteristics of Young Person				
YP ethnicity minority			.692* (.038)	.703* (.038)
Previous academic attainment (KS2)			.107* (.004)	.116* (.004)
Temporary worklessness x KS2 achievement				-.038# (.016)
Persistent worklessness x KS2 achievement				-.060* (.011)
Constant	-.191* (.018)	.096 (.097)	-2.956*(.154)	-3.232*(.164)
R^2	.01	.15	.31	.31

*Note. * p <.001; # p<.01; $ p <.05. An interaction term between parental worklessness and Key Stage 2 achievement was introduced into this model to test the moderating role of earlier achievement for different levels of parental worklessness. YP indicates Young Person; IMD indicates Index of Multiple Deprivation; KS2 indicates Key Stage 2; and EAO indicates Educational Achievement Orientation.*

Table 3. Predicting young person's EAO – FEMALES (unstandardised OLS regression coefficients)

	Model 1 Coefficient (Standard Error)	**Model 2** Coefficient (Standard Error)	**Model 3** Coefficient (Standard Error)	**Model 4** Coefficient (Standard. Error)
Parental worklessness				
Always working (ref)				
Temporary worklessness	-.406* (.072)	-.163$ (.078)	-.145 (.077)	.724 (.376)
Persistent worklessness	-.304 * (.052)	-.032 (.074)	-.002 (.069)	.746# (.289)
Additional Risk Factors				
Parental education				
NCQ5 (degree =ref)				
NVQ4		-.305* (.043)	-.186* (.040)	-.179* (.040)
NVQ3		-.503* (.045)	-.307* (.042)	-.298* (.042)
NVQ2		-.638* (.043)	-.379* (.041)	-.366* (.041)
NVQ1		-.717* (.069)	-.360* (.066)	-.356* (.066)
No qualifications		-.639* (.070)	-.404* (.068)	-.404* (.067)
Teenaged mother at birth		-.029 (.076)	.001 (.072)	-.004 (.071)
Single parent household		-.011 (.046)	-.037 (.043)	-.029 (.043)
Number of siblings		-.042# (.016)	-.023 (.015)	-.024 (.015)
Home Ownership		.232* (.049)	.115# (.046)	.114# (.046)
Gross household income		.011 (.011)	-.003 (.010)	-.003 (.010)
LS illness/disability in the family		-.034 (.040)	.027 (.036)	.026 (.036)
Urban/rural		-.056 (.044)	-.073 (.040)	-.075 (.040)
IMD		-.001 (.001)	-.001 (.001)	-.001 (.001)
Characteristics of Young Person				
YP ethnicity minority			.541* (.035)	.546* (.035)
Previous academic attainment (KS2)			.094* (.004)	.099* (.004)
Temporary worklessness x KS2 achievement				-.034$ (.015)
Persistent worklessness x KS2 achievement				-.030* (.011)
Constant	.111* (.016)	.378* (.083)	-2.290*(.136)	-2.956*(.154)
R^2	.02	.11	.28	.28

*Note. * p <.001; # p<.01; $ p <.05. As in the model for males, an interaction term between parental worklessness and Key Stage 2 achievement was introduced into this model. YP indicates Young Person; IMD indicates Index of Multiple Deprivation; KS2 indicates Key Stage 2; and EAO indicates Educational Achievement Orientation*.

The association between parental worklessness and NEET

Next, the association between parental worklessness and experience of NEET (number of months NEET between September 2006 and May 2010) among young males and females is assessed in a stepwise OLS regression, as above. Model 1 gives the direct associations between parental worklessness and the total number of months the young person has experienced NEET. Model 2 adds the socio-demographic controls, and Model 3 adds characteristics of the individual (ethnicity, previous academic attainment, and EAO at age 16), and Model 4 adds the interaction terms between parental worklessness and EAO to assess their combined effects on the experience of NEET.

Table 4 presents the OLS unstandardized coefficients and standard errors for males. Model 1 in Table 4 shows that parental worklessness had a significant main effect for the young males being NEET. Both temporary and persistent parental worklessness were associated with an increased number of months in NEET. The average total number of months NEET for males growing up with persistently workless parents was 7.60, for males with temporary workless parents it was 6.01 months, and for males with parents who were always working it was 2.97 months. Adding the control variables to the model considerably reduced the association between parental worklessness and the experience of NEET. For males, only the association between persistent worklessness and NEET remained significant (Model 2). Furthermore there were independent risk effects from low parental education (in particular where parents had no qualifications), growing up in a single parent household, living in an urban area, or an area with a high level of multiple deprivation. Home ownership was associated with being fewer months NEET. Model 3 added the individual level variables, which also showed an independent effect: young men from ethnic minority background experienced fewer month being NEET, as did those who did well in their Key Stage 2 examination and who expressed higher levels of EAO at age 16. Among the socio-demographic control variables in Model 3, growing up with a single parent, living in rented accommodation, an urban area or an area with high levels of multiple deprivation maintained significant independent risk effects. In Model 4 the interaction terms were added, suggesting that there was a significant interaction between persistent parental worklessness and EAO. The significant coefficient (b=-2.209, p<.000) indicates that young men from persistently workless families who maintained a positive EAO were experiencing fewer months NEET. With increasing levels of EAO the risk of NEET among young people growing up in a workless household is significantly reduced. Furthermore, adding the interaction term reduced the direct association between parental worklessness and NEET to non-significance. There remain significant independent risk effects from growing up in a single parent household, lack of home ownership, living in an urban area or an area with high levels of multiple deprivation. There was no significant interaction between temporary parental worklessness and EAO.

The results for females are presented in Table 5. Model 1 in Table 5 shows that parental worklessness had a significant main effect for being NEET. Both temporary and persistent parental worklessness were associated with an increased number of months in NEET. The average number of months NEET for females growing up with persistently workless parents was 6.62, for females with temporary workless parents it was 6.37 months, and for females with parents who were always working it was 2.50 months. Adding the control variables to the model considerably reduced the association between parental worklessness and the experience of NEET. For females, only the association between temporary worklessness and NEET remained significant (Model 2). There were independent risk effects from low parental education, growing up with many siblings, lack of home ownership and living in an area with a high level of multiple deprivation. Model 3 added the individual level variables, which also showed independent effects: young women from ethnic minority background experienced fewer month being NEET, as did those who did well in their Key Stage 2 examination and who expressed higher levels of EAO at age 16. Among the socio-demographic control variables in Model 3, living in rented accommodation, or an area with high levels of multiple deprivation maintained significant independent risk effects.

Table 4. Predicting experience of NEET (number of months) – MALES (unstandardised OLS regression coefficients)

	Model 1 Coefficient (Std. Error)	**Model 2** Coefficient (Std. Error)	**Model 3** Coefficient (Std. Error)	**Model 4** Coefficient (Std. Error)
Parental worklessness				
Always working (ref)				
Temporary worklessness	3.043* (.596)	1.077 (.713)	.781 (.694)	.123 (.536)
Persistent worklessness	4.631* (.574)	1.465$ (.720)	1.781# (.717)	.637 (.660)
Additional risk factors				
Parental education				
NCQ5 (degree =ref)				
NVQ4		.220 (.308)	-.542 (.309)	-.432 (.308)
NVQ3		.472 (.321)	-.645 (.328)	-.497 (.326)
NVQ2		.755# (.306)	-.600 (.316)	-.404 (.315)
NVQ1		.993 (.532)	-.679 (.543)	-.472 (.544)
No qualifications		2.507* (.618)	.951 (.603)	1.103 (.603)
Teenaged mother at birth		.484 (.635)	.417 (.654)	.272 (.655)
Single parent household		.994# (.373)	.882# (.361)	.825# (.361)
Number of siblings		.106 (.123)	.025 (.123)	.045 (.124)
Home Ownership		-1.441* (.396)	-.875# (.389)	-.821$ (.388)
Gross household income		-.025 (.087)	.017 (.083)	.009 (.082)
LS illness/disability in the family		.481 (.366)	.381 (.364)	.408 (.361)
Urban/rural		.763# (.269)	.859# (.281)	.849# (.278)
IMD		.027# (.009)	.026# (.009)	.026# (.009)
Characteristics of young person				
YP ethnicity minority			-.884# (.341)	-.662$ (.335)
Previous academic attainment (KS2)			-.172* (.038)	-.170* (.038)
YP EAO			-.971* (.136)	-.753* (.138)
Temporary worklessness x EAO				-1.165 (.612)
Persistent worklessness x EAO				-2.209* (.577)
Constant	2.970* (.106)	2.140* (.635)	7.008* (1.274)	6.887* (1.261)
R^2	.04	.07	.11	.12

*Note: * p <.001; # p<.01; $ p <.05. An interaction term between parental worklessness and EAO was introduced into this model to test its potential moderating role for different levels of parental worklessness. YP indicates Young Person; IMD indicates Index of Multiple Deprivation; KS2 indicates Key Stage 2; and EAO indicates Educational Achievement Orientation.*

Table 5. Predicting experience of NEET (number of months) – FEMALES (unstandardised OLS regression coefficients)

	Model 1 Coefficient (Std. Error)	**Model 2** Coefficient (Std. Error)	**Model 3** Coefficient (Std. Error)	**Model 4** Coefficient (Std. Error)
Parental worklessness				
Always working (ref)				
Temporary worklessness	3.873* (.741)	1.987# (.768)	1.510$ (.753)	1.063 (.647)
Persistent worklessness	4.126* .565)	1.229 (.705)	1.333 (.705)	.699 (.655)
Additional risk factors				
Parental education				
NCQ5 (degree =ref)				
NVQ4		.004 (.307)	-.739# (.309)	-.650# (.307)
NVQ3		-.220 (.297)	-1.476* (.311)	-1.355* (.308)
NVQ2		.338 (.324)	-1.186* (.334)	-1.059* (.332)
NVQ1		1.765# (.709)	-.177 (.677)	-.126 (.670)
No qualifications		1.673# (.651)	.014 (.632)	.159 (.626)
Teenaged mother at birth		-.444 (.640)	-1.047 (.594)	-1.089 (.593)
Single parent household		-.131 (.366)	-.015 (.359)	-.040 (.353)
Number of siblings		.301# (.136)	.180 (.136)	.192 (.135)
Home Ownership)		-1.751* (.436)	-1.288# (.437)	-1.266# (.437)
Gross household income		-.030 (.091)	.027 (.087)	.021 (.086)
LS illness/disability in the family		.621 (.364)	.476 (.356)	.482 (.353)
Urban/rural		.441 (.335)	.444 (.337)	.458 (.334)
IMD		.032# (.010)	.033* (.010)	.033* (.010)
Characteristics of young person				
YP ethnicity minority			-.921# (.319)	-.683# (.318)
Previous academic attainment (KS2)			-.235* (.045)	-.241* (.045)
YP EAO			-1.286* (.180)	-.945* (.175)
Temporary worklessness x EAO				-1.772 (.922)
Persistent worklessness x EAO				-2.414* (.650)
Constant	2.496* (.112)	2.351* (.689)	9.640* (1.426)	9.61* (1.411)
R^2	.04	.07	.13	.14

*Note. * p <.001; # p<.01; $ p <.05. An interaction term between parental worklessness and EAO was introduced into this model to test its potential moderating role for different levels of parental worklessness. YP indicates Young Person; IMD indicates Index of Multiple Deprivation; KS2 indicates Key Stage 2; and EAO indicates Educational Achievement Orientation.*

Parental education was also significant, although the effects are not monotonic, suggesting that after taking into account individual level characteristics, medium level parental qualifications are associated with reduced time in NEET. In Model 4, the interaction terms were added, suggesting that there was a significant interaction between persistent parental worklessness and EAO. The significant coefficient (b=-.-2.414, p<.000) indicates that young women from persistently workless families who maintained a positive educational achievement motivation were experiencing fewer months of NEET. Furthermore, as for males, adding the interaction term reduced the direct association between parental worklessness and NEET to non-significance. There remain significant independent effects of parental education, housing tenure, and living in an area with high levels of multiple deprivation. There was no significant interaction between temporary parental worklessness and EAO.

Gender differences

In a final step, gender differences in the association between parental worklessness and EAO and the experience of NEET were tested through a differences between slopes test. Regarding the results for the final model (Model 4) in the prediction of EAO, there were significant gender differences for gender and persisting parental worklessness (t=2.60; p<.01), parental education at NVQ4 level (t=260; p<.01), at NVQ3 level (t=3.42; p<.00), NVQ2 level (t=3.22; p<.00) and NVQ1 (t=3.39; p<.00); urban/rural (t-2.41; p<.02), ethnic minority status (t=3.04; p<.00), and previous academic attainment at Key Stage 2 (t=3.00; p<3.00). Similar patterns are observed for Model 2-3. In Model 1 and 2 however, there are no significant gender differences regarding the experience of parental worklessness. The findings suggest that males living with persistent workless parents, those living in urban areas, those with ethnic minority status, and those who achieved high key stage 2 scores report higher levels of EAO than females in similar circumstances, while boys with less than degree level educated parents report lower EAO than girls in similar circumstances, except for those whose parents have no qualifications at all.

Regarding the experience of NEET, significant gender differences are only found for living with a single parent (t=2.15; P<.03 in Model 2; t=1.76; P<.08 in Model 3: and t=1.71; P<.09 in Model 4), suggesting that boys growing up with a single parent are slightly more likely to be NEET than females in similar circumstances.

Discussion

Before the Great Recession, about one in ten young people in England grew up with persistently workless parents and one in twenty experienced temporary worklessness of their parents. Worklessness has been defined at the household level, focusing on families in which no parent living in the household was employed. Parental worklessness showed a significant direct association with lower levels of EAO among the offspring as well as a prolonged experience of being NEET between ages 16 to 20 when the UK experienced a major economic downturn. The magnitude of the direct effect of parental worklessness on the experience of NEET among the offspring was moderate and explained only a small amount of variance, which suggests that there might be other potential explanatory factors. Furthermore, the association between parental worklessness and the outcomes under consideration could largely be explained by a number of other socio-demographic factors, in particular low levels of parental education, lack of home ownership, large family size and living in an area characterised by multiple levels of deprivation, pointing towards the role of multiple disadvantage and deprivation rather than worklessness per se.

The association between parental worklessness and the young person being NEET was fully explained after taking into account the interplay of worklessness and EAO. There was a significant interaction between parental worklessness and EAO, where young people growing up in persistent workless households, who expressed high levels of EAO, had a reduced risk of experiencing NEET, after taking into account the potential confounding socio-demographic risk factors and individual characteristics. As suggested in a previous qualitative study (Shildrick et al., 2012), the findings thus do not support the assumption of an inter-generational transmission of 'a culture of worklessness', where values and practices that discourage achievement are passed down from parents to their children. Rather,

the findings suggest that children of workless parents potentially recognize the value of higher education and do not want to repeat the predicament of their parents. Indeed, the majority of young people growing up in workless households aspire to participate in higher education and many want to apply to university. For example, about 75% of males growing up in workless families want to continue in education beyond compulsory school leaving age, compared to 82% of males whose parents were always working. For females, the equivalent percentages are 91% of girls in workless households compared to 93% of girls with working parents. Aspirations towards studying at university were expressed by 42% of males and 58% of females in workless households, compared to 61% of males and 72% of females with working parents.

Regarding EAO, low parental education was a significant independent risk factor diminishing the EAO for both males and females over and above the other variables included in the model.

Regarding the experience of NEET, living in rented accommodation, and living in a highly deprived area were independent risk factors for both males and females, over and above the experience of parental worklessness, other socio-demographic factors and individual characteristics (ethnicity, previous academic attainment and EAO), suggesting the importance of how and where one lives in influencing the experience of NEET (Ainsworth, 2002).

Even though males and females differed regarding the time they were NEET, no significant gender differences in the role of socio-demographic, individual and community factors were found, except that for young males, living with a single parent appears to be an additional independent risk factor for experiencing NEET. This finding potentially points to the lack of economic resources and social networks that can undermine the life chances of young men in particular, especially concerning job search (Ioannides & Loury, 2004). Otherwise the likely risk factors for experiencing NEET appear to be similar for males and females.

There were however, significant gender differences in the association between parental worklessness and EAO – but only after controlling for all the other variables included in the model. Males growing up with persistently workless parents report higher EAO than females, especially if their parents are educated to degree level, if they live in an urban area, are from an ethnic minority background and have good Key Stage 2 attainment. The findings thus suggest that in specific circumstances, the experience of parental worklessness can impel in particular young males to recognize the value of higher education. Possibly, highly educated parents can motivate their children to achieve in education, independent of their own precarious employment situation (see also Mortimer, Zhang, Hussemann, &Wu, this issue). To fully understand the implications of parental worklessness on young males and females, it is thus important to consider the total level of vulnerabilities and different constellations of risk within families.

The study furthermore found significant ethnic differences, with males and females from ethnic minority backgrounds reporting higher levels of EAO than whites, and fewer months being NEET. The study thus confirms previous evidence regarding higher EAOs among ethnic minority children in England (Strand, 2007, 2008). Their higher rates of staying on in full-time education beyond compulsory schooling (Dustmann, Machin & Schönberg, 2010) have been explained by differences in cultural attitudes towards higher education (Torgerson et al, 2008), and the expectation that better qualifications will reduce the effect of possible future racial discrimination in the labour market (Connor, Tyers, Modood, & Hillage, 2004). Generally, this study found that high EAO, as well as high previous academic attainment, can act as protective factors, reducing the risk of being long-term NEET.

There are many strengths of this study, among which are the use of a large scale nationally-representative dataset, and the longitudinal design which allows measurement of the duration of worklessness as well as of NEET. As in most longitudinal studies, the analysis is constrained by having to make best use of the available data, their measurement level and timing. For example, parental worklessness and EAOs were measured before the onset of the Great Recession, and the subsequent education and employment transitions just before and during the economic downturn. It was thus not possible to assess how EAOs responded to the economic downturn. However, the data enabled the

assessment of longer term outcomes associated with parental worklessness and EAO during a period that included a major economic downturn.

Another issue to be addressed is missing data, which might have affected the validity of the results. Although the analytic sample remained largely representative of the population, young people from less privileged family backgrounds were less likely to be included in our analysis. Response bias at the individual level would tend to underestimate the magnitude of effects of social disadvantage, as sample attrition is greatest among cohort members in more deprived circumstances. The problem of missingness in the data was addressed using multiple imputation. Nonetheless, the results might provide a conservative estimate of social inequalities in the sample.

Regarding methodology, this study is one of the first to assess the independent risk effect of parental worklessness on the experience of NEET among males and females. OLS regression models were used to gain a better understanding of how each of the selected variables contributed to the expression of EAO and experience of NEET. Future studies should use Structural Equation Modelling to examine the combined and simultaneous effect of the relevant variables in more detail, and/or Hierarchical Linear Modelling to assess distinct area effects.

In summary, the findings presented here highlight that youth development occurs within a set of interlinked contexts ranging from the macro to the micro level. For a better understanding of young people's experiences in the transition to independent adulthood and the inter-generational transmission of (dis-)advantage, it is important to adopt a developmental-contextual perspective (Schoon, 2006; Vondraceck et al., 1986) and ecological approaches (Bronfrenbrenner, 1986; Elder, 1998) that take into account these multiple influences. The significant role of family socio-demographic factors (in particular low parental education and lack of housing tenure) over and above the experience of parental worklessness in shaping both EAO and experience of NEET highlighted the issue of multiple deprivation, i.e. the accumulation of social and economic disadvantages, as a major factor in reducing the life chances of young people. The findings give only partial support to a policy agenda targeted at workless households per se. They rather point to the need to tackle the wider range of risks that families living in difficult socio-economic circumstances are facing.

The findings also suggest the manifestation of remarkable resilience among the affected young people. There was a significant interaction between persistent parental worklessness and individual EAO, suggesting that individual EAO can potentially act as a resource factor reducing the risk of negative outcomes for young people growing up in disadvantaged circumstances. Special efforts should thus be directed at young people growing up in families facing multiple economic challenges, especially young males, with the aim of raising their EAO, their engagement in education, and removing barriers to employment. This study does, however, only reflect employment experiences of young people between ages 16 to 20, and the observed patterns might not hold for employment related outcomes in the longer run.

Furthermore, the significant role of area characteristics, over and above the experience of parental worklessness and other socio-demographic characteristics, suggests that it matters *where* young people live, and that area characteristics can affect youth development and adjustment. Previous studies have shown that neighbourhood effects are strongest during early childhood and late adolescence (Brooks-Gunn, Duncan & Aber, 1997). This study confirms the importance of area deprivation and points to local opportunities, and potentially also collective socialisation (Ainsworth, 2002; Ioannides & Loury, 2004), which influence the type of role models a young person is exposed to outside the home and thereby shape the education and employment transitions of young people.

Acknowledgements

Earlier versions of this paper were presented at the 2012 Meeting of the Society for Longitudinal and Life Course Studies, Paris. The study is supported by Grant Numbers ES/J019658/1 and ES/J019135/1 from the British Economic and Social Research Council (ESRC) for the Centre for Learning and Life-chances in the Knowledge Economies (LLAKES, Phase II) and the ESRC workshop series on Young People and the Great Recession. The content is solely the responsibility of the author and may not represent the views of the sponsors.

References

Ainsworth, J. W. (2002). Why does it take a village? The mediation of neighborhood effects on educational achievement. *Social Forces, 81*, 117-152. http://dx.doi.org/10.1353/sof.2002.0038

Ashton, D., & Bynner, J. (2011). Labour market, employment and skills. In M. E. J. Wadsworth & J. Bynner (Eds.), *A companion to life course studies. The social and historical context of the British birth cohort studies (*pp. 122-147*)*. London: Routledge.

Beal, S. J., & Crockett, L. J. (2010). Adolescents' occupational and educational aspirations and expectations: Links to high school activities and adult educational attainment. *Developmental Psychology, 46*, 258-265. http://dx.doi.org/10.1037/a0017416

Berthoud, R. (2011) Trends in the employment of disabled people in Britain. *Vol. ISER Working Paper Series, 2011-03*: Institute for Social and Economic Research, University of Essex.

Bradley, R. H., & Corwyn, R. F. (2002). Socioeconomic status and child development. *Annual Review of Psychology, 53*, 371-399. http://dx.doi.org/10.1146/annurev.psych.53.100901.135233

Bradshaw, J., & Mayhew, E. (Eds.). (2005). *The Well-being of Children in the United Kingdom*. London: Save the Children.

Bronfenbrenner, U. (1986). Ecology of the family as a context for human development: Research perspectives *Developmental Psychology 22*, 723-742. http://dx.doi.org/10.1037/0012-1649.22.6.723

Brooks-Gunn, J., Duncan, G. J., & Aber, L. (1997). *Neighborhood Poverty: Context and Consequences for Children*. New York: Russel Sage Foundation.

Coelli, M. B., Green, D. A., & Warburton, W. P. (2007). Breaking the cycle? The effect of education on welfare receipt among children of welfare recipients. *Journal of Public Economics, 91*, 1369-1398.

Collingwood, A., Cheshire, H., Nicolaas, G., D'Souza, J., Ross, A., Hall, J., Armstrong, C., Prosser, A.,Green, R.,Collins, D.,Gray, M.,McNaughton Nicolls, C. . (2010). A review of the Longitudinal Study of Young People in England (LSYPE): Department for Education, Research Report DFE-RR048. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/181703/DFE-RR048.pdf

Connor, H., Tyers, C., Modood, T. and Hillage, J. (2004), *Why the Difference: A closer look at ethnic minority students and graduates*. Research report No. 552. London: DfES.

Crawford, C., Duckworth, K., Vignoles, A., & Wyness, G. (2011). *Young people's education and labour market choices aged 16 to 19.* London: Centre for Analysis of Youth Transitions. http://www.ifs.org.uk/publications/5962o.

Dustmann, C., Machin, S., & Schönberg, U. (2010). Ethnicity and educational achievement in compulsory schooling. *Economic Journal, 120*, F272-F297.

Elder, G. H. (1998). The life course as developmental theory. *Child Development, 69*, 1-12.

Engle, P. L., & Black, M. M. (2008). The Effect of Poverty on Child Development and Educational Outcomes. *Ann NY Acad Sci, 1136*, 243-256.

Ermisch, J., Francesconi, M., & Pevalin, D. J. (2004). Parental partnership and joblessness in childhood and their influence on young people's outcomes. *Journal of the Royal Statistical Society Series a-Statistics in Society, 167*, 69-101.

Erikson, R. (1984). Social class of men, women and families. *Sociology*, *18*, 500-514. http://dx.doi.org/10.1177/0038038584018004003

European Parliament. (2013). *The advantages of a gender-sensitive approach to tackle youth unemployment*. European Parliament. Policy Department. EST92550.pdfo.

European Commission (2014) Eurostat, 2012. http://epp.eurostat.ec.europa.eu/tgm/table.do?tab=table&init=1&plugin=1&language=en&pcode=tps00181

Gottschalk, P. (1996). Is the correlation in welfare participation across generations spurious? *Journal of Public Economics, 63*, 1-25. http://dx.doi.org/10.1016/S0047-2727(96)01585-X

Gregg, P., & Wadsworth, J. (2001). Everything you ever wanted to know about measuring worklessness and polarization at the household level but were afraid to ask. *Oxford Bulletin of Economics and Statistics, 63*, 777-806. http://dx.doi.org/10.1111/1468-0084.63.spe1.9

Gregg, P., Harkness, S., & Machin, S. (1999). Poor Kids: Trends in Child Poverty in Britain, 1968–96 *Fiscal Studies, 20*, 163-187. http://dx.doi.org/10.1111/j.1475-5890.1999.tb00009.x

Gregg, P., & Wadsworth, J. (2008). Two sides to every story: Measuring polarization and inequality in the distribution of work. *Journal of the Royal Statistical Society Series A-Statistics in Society, 171*, 857-875.

Gutman, L. M., Schoon, I., & Sabates, R. (2012). Uncertain aspirations for continuing in education: Antecedents and associated outcomes. *Developmental Psychology, 48*, 1707-1718. http://dx.doi.org/10.1037/a0026547

Harkonen, J. (2011). Children and dual worklessness in Europe: A comparison of nine countries. *European Journal of Population-Revue Europeenne De Demographie, 27*, 217-241. http://dx.doi.org/10.1007/s10680-011-9232-3

Haveman, R. H., & Wolfe, B. (1994). *Succeeding generations: On the effects of investments in children*. New York: Russell Sage Foundation.

Iacovou, M., & Berthoud, R. (2000). *Parents and employment. An analysis of low-income families in the British Household Panel Survey*. London: Stationary Office.

Ioannides, Y. & Loury, L. (2004). Job information networks, neighbourhood effects and inequality. *Journal of Economic Literature*, *42*, 1056-93. http://dx.doi.org/10.1257/0022051043004595

Jencks, C., & Mayer, S. E. (1990). The social consequences of growing up in a poor neighbourhood. In L. E. J. Lynn & M. G. H. McGeary (Eds.), *Inner-city poverty in the United States* (pp. 111-187). Washington, DC: National Academy Press.

Jenkins, S., Brandolini, A., Micklewright, J., & Nolan, B. (2013). *The great recession and the distribution of household income* . Oxford: Oxford University Press.

Johnson, M. K., & Reynolds, J. R. (2013). Educational expectation trajectories and attainment in the transition to adulthood. *Social Science Research, 42*, 818-835. http://dx.doi.org/10.1016/j.ssresearch.2012.12.003

Johnson, P., & Reed, H. (1996). Intergenerational mobility among the rich and poor: Results from the National Child Development Study. *Oxford Review of Economic Policy, 12*, 127-143. http://dx.doi.org/10.1093/oxrep/12.1.127

Kerckhoff, A. C. (1993). *Diverging pathways: Social structure and career deflections*. Cambridge: Cambridge University Press.

Kerckhoff, A. C. (2001). Education and social stratification processes in comparative perspective. *Sociology of Education*, *74*, 3-18. http://dx.doi.org/10.2307/2673250

Leventhal, T., & Brooks-Gunn, J. (2003). Children and youth in neighborhood contexts. *Current Directions in Psychological Science, 12,* 27-31.

Macmillan, L. (2010). *The intergenerational transmission of worklessness in the UK*. Bristol: The Centre for Market and Public Organisation (CMPU).

Macmillan, L. 2011). *Measuring the intergenerational correlation of worklessness* Bristol: Bristol Institute of Public Affairs, University of Bristol, Working Paper No. 11/278. http://www.bristol.ac.uk/cmpo/publications/papers/2011/wp278.pdf

Macmillan, L. (2014). Intergenerational worklessness in the UK and the role of local labour markets. *Oxford Economic Papers Advance Access.* http://oep.oxfordjournals.org/content/early/2014/02/05/oep.gpt046.short?rss=1

Marjoribanks, K. (1989). Environments, adolescents' aspirations and young adults' status attainment. *Educational Studies, 15*, 155-164. http://dx.doi.org/10.1080/0305569890150206

McLanahan, S. (1997). Parent absence or poverty: Which matters more? In G. J. Duncan & J. Brooks-Gunn (Eds.), *Consequences of growing up poor* (pp. 35-48). New York: Russell Sage Foundation.

McLanahan, S. (2004). Diverging destinies: How children are faring under the second demographic transition. *Demography, 41*, 607-627. http://dx.doi.org/10.1353/dem.2004.0033

McLanahan, S., & Sandefur, G. (1994). *Growing up with a single parent: What hurts, what helps?* Cambridge, MA: Harvard University Press.

Mello, Z. R. (2008). Gender variation in developmental trajectories of educational and occupational expectations and attainment from adolescence to adulthood. *Developmental Psychology, 44*, 1069-1080. http://dx.doi.org/10.1037/0012-1649.44.4.1069

Mortimer, J.T., Zhang, L., Hussemann, J., & Wu, C-Y. (2014). Parental economic hardship and children's achievement orientations. *Longitudinal and Life Course Studies, 5*, 105-128. http://dx.doi.org/10.14301/llcs.v5i2.271

Murry, V. M., Berkel, C., Gaylord-Harden, N. K., Copeland-Linder, N., & Nation, M. (2011). Neighborhood Poverty and Adolescent Development. [Article]. *Journal of Research on Adolescence, 21*, 114-128.

ONS. (2011). Working and workless households. *Office for National Statistics. Statistical Bulletin* http://www.ons.gov.uk/ons/dcp171778_229480.pdf.

ONS. (2012). *Characteristics of young unemployed people*: Office for National Statistics. http://www.ons.gov.uk/ons/dcp171776_256894.pdf

O'Neill, D., & Sweetman, O. (1998). Intergenerational mobility in Britain: Evidence from unemployment patterns. *Oxford Bulletin of Economics and Statistics, 60*, 431-449. http://dx.doi.org/10.1111/1468-0084.00108

Pemberton, S. (2008). Tackling the NEET generation and the ability of policy to generate a 'NEET' solution - evidence from the UK. *Environment and Planning C-Government and Policy, 26*, 243-259. http://dx.doi.org/10.1068/c0654

Platt, L. (2010). Ten year transitions in children's experience of living in a workless household: Variations by ethnic group. *Population Trends, 139,* 70-90. http://dx.doi.org/10.1057/pt.2010.6

Reynolds, J. R., & Burge, S. W. (2008). Educational expectations and the rise in women's post-secondary attainments. *Social Science Research, 37*, 485-499. http://dx.doi.org/10.1016/j.ssresearch.2007.09.002

Reynolds, J. R., & Pemberton, J. (2001). Rising college expectations among youth in the United States - a comparison of the 1979 and 1997. US National Longitudinal Study of Youth. *Journal of Human Resources, 36*, 703-726. http://dx.doi.org/10.2307/3069639

Royston, P., Carlin, J. B., & White, R. R. (2009). Multiple imputation of missing values: New features for mim. *Stata Journal, 9*, 252-264.

Rubin, D. B. (1996). Multiple imputation after 18+ years. *Journal of the American Statistical Association, 91*, 473-489. http://dx.doi.org/10.1080/01621459.1996.10476908

Rutter, M. (1981). Stress, coping and development - some issues and some questions. *Journal of Child Psychology and Psychiatry and Allied Disciplines, 22*, 323-356. http://dx.doi.org/10.1111/j.1469-7610.1981.tb00560.x

Rutter, M. (2009). Understanding and testing risk mechanisms for mental disorders. *Journal of Child Psychology and Psychiatry, 50*, 44-52. http://dx.doi.org/10.1111/j.1469-7610.2008.01976.x

Schneider, B., & Stevenson, D. (1999). *The ambitious generation: America's teenagers, motivated but directionless*. New Haven: Yale University Press.

Schoon, I. (2006). *Risk and resilience: Adaptations in changing times.* Cambridge: Cambridge University Press. http://dx.doi.org/10.1017/CBO9780511490132

Schoon, I. (2010). Planning for the future: Changing education expectations in three British cohorts. *Historical Social Research-Historische Sozialforschung, 35*, 99-119.

Schoon, I., Barnes, M., Parsons, S., Brown, V., Ross, A., & Vignoles, A. (2012). *Intergenerational transmission of worklessness: Evidence from the millennium cohort and the longitudinal study of young people in england.* Department for Education. DFE-RR-234. https://www.education.gov.uk/publications/eOrderingDownload/DFE-RR234.pdf

Schoon, I., Martin, P., & Ross, A. (2007). Career transitions in times of social change. His and her story. *Journal of Vocational Behavior, 70*, 78-96. http://dx.doi.org/10.1016/j.jvb.2006.04.009

Schoon, I., & Parsons, S. (2002). Teenage aspirations for future careers and occupational outcomes. *Journal of Vocational Behavior, 60*, 262-288. http://dx.doi.org/10.1006/jvbe.2001.1867

Sewell, W. H., Haller, A. O., & Ohlendorf, G. W. (1970). The educational and early occupational status attainment process: Replication and revision. *American Sociological Review, 35*, 1014-1027. http://dx.doi.org/10.2307/2093379

Sewell, W. H., & Hauser, R. M. (1975). *Education, occupation, and earnings: Achievement in the early career*. New York: Academic Press.

Sewell, W. H., Hauser, R. M., & Wolf, W. C. (1980). Sex, schooling, and occupational status. *The American Journal of Sociology, 86*, 551-583. http://dx.doi.org/10.1086/227281

Shildrick, T., MacDonald, R., Furlong, A., Roden, J., & Crow, R. (2012). *Are 'cultures of worklessness' passed down the generations?* York: Joseph Rowntree Foundation. http://www.jrf.org.uk/sites/files/jrf/worklessness-families-employment-full.pdf

Strand, S. (2007). *Minority ethnic pupils in the Longitudinal Study of Young People in England (LSYPE)*. London: Department for Children, Schools and Families (DCSF). Research Report No RR002.

http://webarchive.nationalarchives.gov.uk/20130401151715/https://www.education.gov.uk/publications/eOrderingDownload/DCSF-RR002.pdf
Strand, S. (2008), *Minority Ethnic Pupils in the Longitudinal Study of Young People in England.* Report DCSF-RR029. London: Department for Children, Schools and Families.
Such, E., & Walker, R. (2002). Falling behind? Research on transmitted deprivation *Benefits, 35*, 185-192.
Torgerson, C., Gorard, S., Low, G., Ainsworth, H., See, B. H. and Wright, K. (2008), *What are the factors that promote high post-16 participation of many minority ethnic groups?: A focused review of the UK-based aspirations literature*. Institute of Education, Social Science Research Unit, University of London. Evidence for Policy and Practice Information and Co-ordinating Centre . http://eppi.ioe.ac.uk/cms/Default.aspx?tabid=2386
Vondracek, F. W. (1998). Career development: A lifespan perspective. *International Journal of Behavioral Development, 22*, 1-6. http://dx.doi.org/10.1080/016502598384487
Vondraceck, F. W., Lerner, R. M., & Schulenberg, J. E. (1986). *Career development: A life-span developmental approach.* Hillsdale, NJ: Erlbaum.
Vuolo, M., Staff, J., & Mortimer, J. T. (2012). Weathering the great recession: Psychological and behavioral trajectories in the transition from school to work. *Developmental Psychology, 48*, 1759-1773. http://dx.doi.org/10.1037/a0026047
Webster, D. (2000). The geographical concentration of labour market disadvantage. *Oxford Review of Economic Policy, 16*, 114-128. http://dx.doi.org/10.1093/oxrep/16.1.114

Endnotes

[i] General Certificate of Secondary Education (GCSE): a public examination in specified subjects given at the end of key stage 4 for 16 year-olds in England which is part of the National Qualifications Framework. Candidates receive a grade for each subject that they have sat. The pass grades, from highest to lowest, are: *A** (pronounced 'A-star'), *A*, *B*, *C*, *D*, *E*, *F* and *G*. Grade *U* (ungraded/unclassified) is issued when students have not achieved the minimum standard to achieve a pass grade; the subject is then not included on their final certificate. A GCSE at grades D–G is a Level 1 qualification, while a GCSE at grades A*–C is a Level 2 qualification. As one would expect, GCSEs at A*-C (Level 2) are much more desirable and insisted on by many employers and educational institutions. Level 1 qualifications are required to advance to Level 2 qualifications. Likewise, Level 2 qualifications are required to advance to Level 3 qualifications.

[ii] A Key Stage is a stage of the state education system in England, Wales and Northern Ireland. Key Stage 2 reflects attainment at the later stage of primary education, often known as junior schools.

Precursors and consequences of youth poverty in Germany

Olaf Groh-Samberg
ogs@bigsss-bremen.de
Wolfgang Voges
University of Bremen

(Received December 2013 Revised April 2014) http://dx.doi.org/10.14301/llcs.v5i2.281

Abstract

We examine time trends, precursors and continuity of poverty during youth and young adulthood in Germany. Although Germany's labour market performed well during the recent economic crisis, this occurred against the backdrop of growing social inequality and strong increase in the risk of poverty, especially among youth and young adults. Based on data from the German Socio-Economic Panel Study, we propose a method to take into account inter-generational support by virtually pooling the income of residentially independent children and their parents. We show that poverty risks are differentially related to the "big five" transitions to adulthood. Leaving the parental home and entering unemployment strongly increase poverty risks, whereas cohabitation and employment in the higher labour market segments are strong protectors against poverty. The transition to parenthood, educational participation and precarious employment are not consistently related to poverty risk once inter-generational support is taken into account. While enrollment at university has a positive impact on poverty when residentially independent children are considered economically independent, this effect disappears with adjustment for parental resources. Whereas the impact of youth transitions does not change over time, social background has a strong and increasing impact on poverty risks. Social background and poverty experiences during youth strongly affect poverty risks later in life, although life course continuity weakens through the period of youth transitions. Overall, these results clearly point towards the increasing importance of social background and inequality in affecting the risk of poverty during the transition to adulthood.

Keywords: Youth transitions, poverty, life course, inter-generational transmission, Germany, Great Recession, SOEP

1. Introduction

In considering the impact of the recent Great Recession on youth and young adults, Germany clearly stands out as an exceptional case (Scarpetta, Sonnet & Manfredi, 2010; Cahuc, Carcillo, Rinne & Zimmermann, 2013; Bell & Blanchflower, 2011). Whereas youth unemployment skyrocketed in many European countries, and increased to a lesser extent in the U.S., Germany experienced a decline. Germany's decline in the youth unemployment rate paralleled an overall positive trend in the labour market. Although economic growth rates elsewhere were sharply hit by the Great Recession, the German labour market performed extraordinary well, giving rise to "another economic miracle" (Rinne and Zimmermann, 2011).

However, as far as youth and young adults are concerned, this picture of only marginal impact of the Great Recession in Germany is only half of the story. The other half is that almost no other OECD country has experienced an increase of poverty rates that compares to the German case, in the short period between the end of the last millennium and the advent of the Great Recession

(Grabka & Frick, 2013; OECD, 2008, 2011; Keeley & Love, 2010). Even more striking, in no other age group did poverty rates increase so much as in the age group between 18 and 25 years (see Figure 3 below). Youth and young adults now comprise the age group with the highest poverty rates in Germany; this was not the case a decade ago. This steep increase in youth poverty in Germany has received little attention from the general public and in the social sciences (Grabka & Frick, 2010; Reinowski & Steiner, 2006).

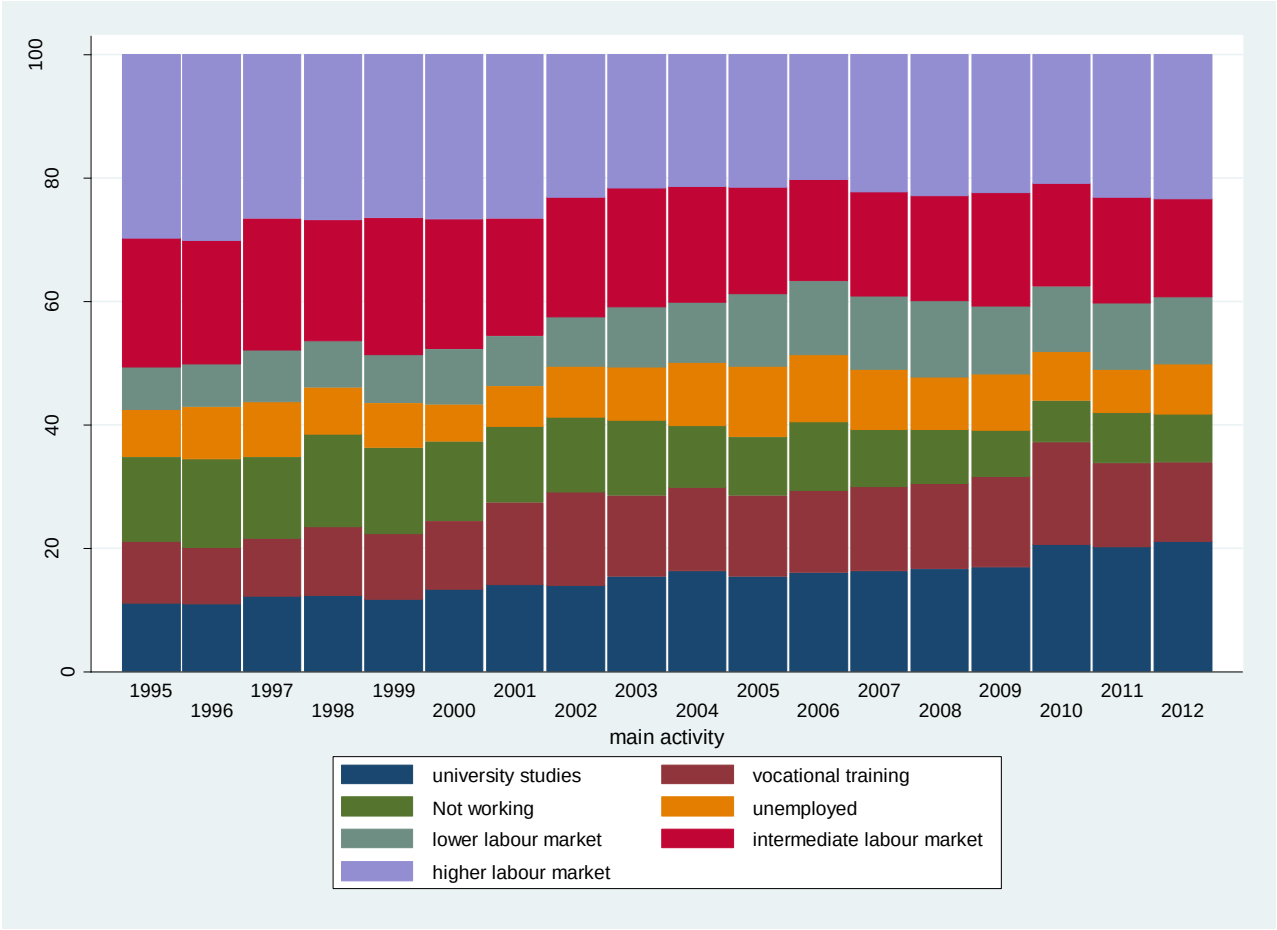
This paper proceeds in five parts: in the following section (2) we provide a brief overview of changes in youth transitions, setting the context for increasing poverty risks. Next we describe the data and measurements (3). We also introduce an adjusted measure of poverty that accounts for the potential inter-generational support of children who have moved out of the parental home (4). We then (5) provide a brief descriptive overview of poverty trends in Germany, focusing on the age range between 15 and 30. In section 6 we analyze the precursors of poverty by means of regression analysis. Section 7 addresses the life-course consequences of youth poverty. Section 8 concludes.

2. Changing youth transitions in Germany

The increase of youth poverty is embedded in ongoing social changes characterizing the transitions from youth to adulthood (Blossfeld, Buchholz, Bukodi & Kurz, 2008; Kurz, Steinhage & Golsch, 2005). Educational expansion has led to a prolongation of education in young adults' life-courses, and complex trends have led to a weakening of the traditionally strong coupling between the vocational training system (the so called "dual system") and the labour market in Germany. Ever more young people are entering the so-called "transition system" that does not provide approved vocational certificates (Baethge, Solga & Wieck, 2007). In turn, labour market entry has become increasingly difficult during the past decades (Buchholz & Kurz, 2008; Giesselmann, 2009). This is not only attributable to changes in the vocational system, but also due to structural changes in the German labour market, resulting in a large increase in low-paid and precarious jobs (Giesecke & Heisig, 2011; Giesselmann & Lohmann, 2008), tightened competition and intensification of work (i.e., working longer and harder; see Lenhardt & Priester, 2005), and a marked decline of tenure (Diewald & Sill, 2004). With the extensive labour market reforms introduced between 2002 and 2004, the precarious segment of the labour market expanded greatly. From 2000 to 2005, unemployment rates increased sharply in Germany and then declined rapidly. However, this decline was not accompanied by an increase in regular employment but rather by increasing numbers of precarious jobs, including part-time and marginal employment.

Trends in participation in education and work for young adults aged 20-30 years are summarized in Figure 1. On the one hand, we see educational expansion resulting in a steady increase in the proportion of young adults enrolled at university (including the universities of applied sciences). The share of young people in vocational training is increasing as well, but this share includes those enrolled or even trapped in the so called "transition system". The share of young adults who are not in the labour market and not in education or training is decreasing over time. This might be due to a decrease of young mothers and housewives. On the other hand, we see increasing difficulties in the labour market, indicated by rising unemployment and precarious employment. We use a composite measure of labour market segmentation that is described in more detail in the data section below (see section 3). Whereas more than 50% of the young adults were employed in the higher or intermediate labour market segment in 1995, this share has declined to almost 40% in 2012, with the strongest decline for employment in the higher labour market segment.

Figure 1. Trends in educational enrollment and labour market participation of 20-30 year olds

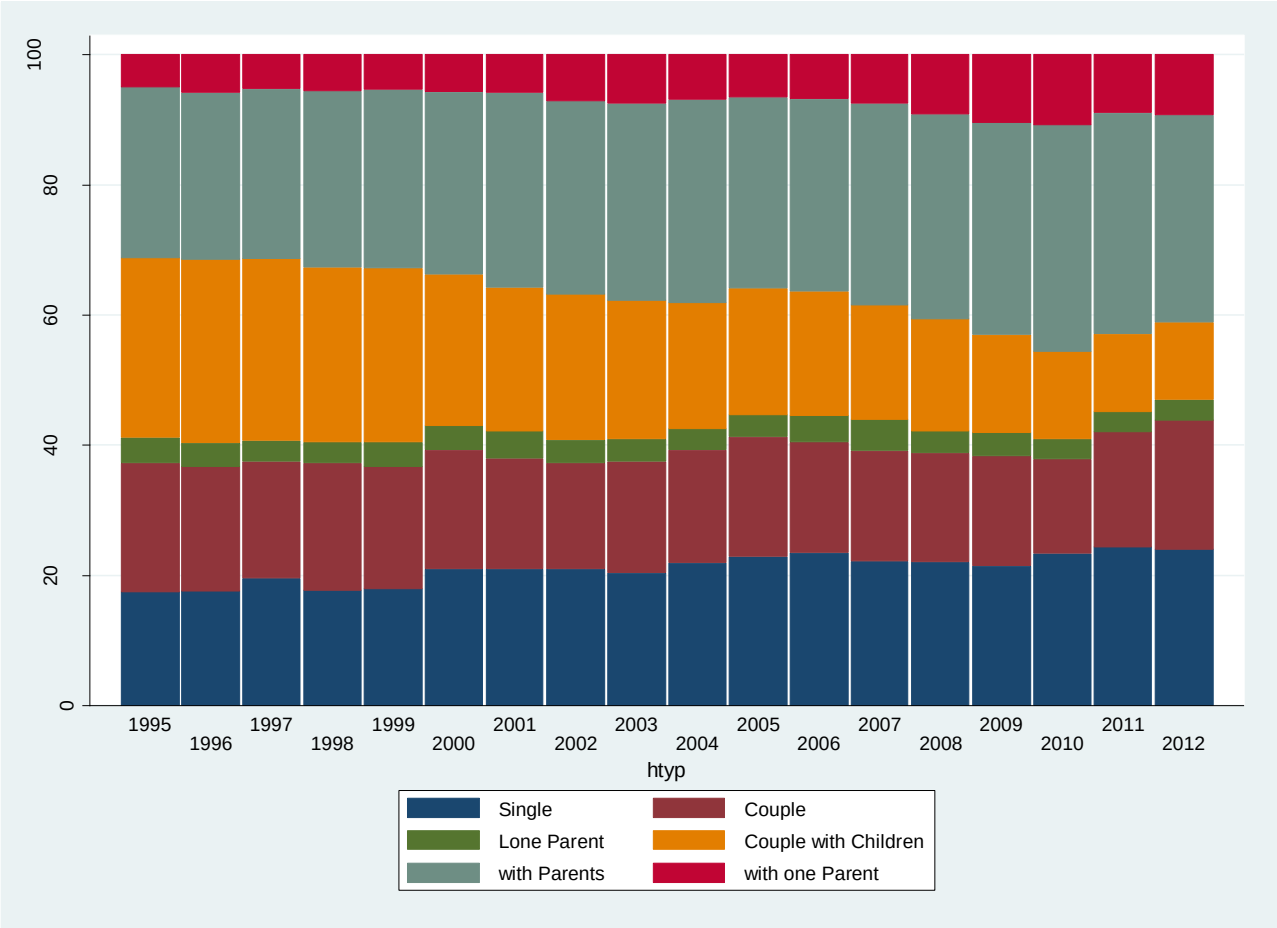


SOEPv29, 1995-2012, weighted results.

At the same time, a secular trend towards prolongation of adolescence and post-adolescence has led to a postponement and diversification of the transition to independent living and family formation (Scherger, 2009). There is empirical evidence that the postponement of family formation is at least partly due to increased labour market insecurity (Gebel & Giesecke, 2009; Düntgen & Diewald, 2007). This is particularly true for highly qualified women seeking to enter into higher segments of the labour market before childbirth. However, for less qualified women with poor labour market prospects, unemployment or precarious employment can trigger early childbirth (Düntgen & Diewald, 2007). In general, changing gender roles and female labour market participation challenge the traditional "male breadwinner model" of the German welfare state (Gottschall & Bird, 2003) and pose new threats to the reconciliation of work and family. As a consequence, fertility rates have declined rapidly in Germany, ranking among the lowest fertility countries in the OECD world (Population Reference Bureau, 2013).

Figure 2 summarizes these changes. The last 20 years have seen a strong decline in the share of 20 to 30 year old young adults who have already built their own families. A growing proportion is either still living with their parents or is living in single households.[1]

Figure 2. Trends in living arrangements of 20-30 year olds



SOEPv29, 1995-2012, weighted results.

The trends in youth transitions can be assumed to interact in complex ways with the increased risk of experiencing poverty during youth and young adulthood. Overall, the transition period to adulthood has become extended, taking young adults much longer than in former periods to acquire good jobs in the labour market and to form their own families. The reasons for this extension of post-adolescence are manifold, including educational expansion and less traditional gender roles for women, and increasing difficulties in the labour market.

These trends might indicate processes of convergence or of polarization between young adults from various educational and social class backgrounds. Has the increasing duration and uncertainty of the transition to adulthood led to a democratization of risks, extending to the middle classes, or are risks concentrated among the offspring of the lower social classes? Answering this question requires empirical examination of the inter-relations of social background, youth transitions, and poverty risks. In this article, we analyze potential precursors and consequences of youth poverty from life course and social class perspectives. We examine the precursors of youth poverty with a particular focus on the "Big Five" transitions to adulthood, i.e., leaving the parental home, cohabitation or marriage, childbirth or becoming a parent, educational completion and labour market entry (Schulenberg & Schoon, 2012). We ask to what extent these five transitions and poverty risks are inter-related: Do certain transitions lead to poverty or does poverty hinder or foster certain transitions? At the same time, we ask whether the impact of social origins on youth poverty has indeed widened or loosened.

In addressing these questions, we need to account for a particular pitfall in the analysis of poverty among young adults. Many young adults from higher social class backgrounds leave their parental homes for university education and usually live on low incomes during the period of their studies. However, while they appear to live

independently, they might still receive support from their parents, including monetary transfers, but also in-kind transfers. In this paper, we make use of the unique feature of household panel data to link children who live independently, with the households of their parents, in order to take into account potential inter-generational support. Moreover, we assess the life course consequences of youth poverty in Germany, making use of long-term panel data to trace youth through their transitions to adulthood.

3. Data and measurement

We use data from the German Socio-Economic Panel Study (SOEP), which surveys a nationally representative sample of private households annually (Wagner, Frick & Schupp, 2007). The SOEP started in 1984 in West-Germany and included a sample from Eastern Germany immediately after the fall of the Berlin Wall in 1989. We use data from all supplementary and refreshment samples and all waves through 2012. The SOEP collects personal information from all adults aged 17 years and older in the household. Information on younger children and on the household level are collected from the head of the household. The SOEP data provide a unique opportunity to assess life-course transitions from youth to adulthood, and to account for inter-generational support by linking young adults, who have left their parental homes, with their parents.

Given that there is no commonly accepted definition of youth and any definition of age groups remains arbitrary, we focus on youth and young adults aged 15 to 30 years in order to cover the period of the transition from school to work. This age band is also used in many European youth reports (e.g., the EU Youth Reports from 2009 and 2011 define youth as those aged 15-29, see EU 2009, 2011).

In assessing the impacts of transitions on youth poverty, we control *socio-demographic characteristics* including gender, age, region (West vs. East Germany), and migrant status (1st and 2nd generations). *Social background* is based on the higher level of education of both parents and the social class of the father or – if not available – the mother. This information mostly comes from the personal interviews of the parents themselves, or otherwise from the children's biographical questionnaire. The educational attainment of the parents is measured using the CASMIN classification of general and vocational degrees (Projektgruppe SOEP, 2012: 57f.).[2] The social class status is determined based on the Goldthorpe class scheme (EGP class scheme, cf. Erikson and Goldthorpe, 1992: 28-64). We use a collapsed six-class version comprising the higher service class (managers, administrators, large employers and academic professionals), the lower service class (highly qualified clerks and civil servants), routine non-manual and service sales occupations, small self-employed with less than five employees (including farmers), skilled manual, and unskilled (including farm) manual workers.

The "Big Five" *transitions to adulthood* are measured separately by five variables indicating whether young adults (1.) still live with their parents, (2.) live with a partner (cohabitation)[3], (3.) have a child, (4.) educational enrollment, and (5.) labour market status. *Educational enrollment* is measured as student status in an educational institution (secondary school, vocational training, or university) at the time of the interview. Labour market participation is measured by employment status (gainfully employed, unemployed, inactive/not working) and labour market segment. Among the gainfully employed, *labour market segment* is indicated by a composite index of the following three dimensions: hourly wages (below two thirds of the median wage of a fulltime employed West-German man, more than 150% of this wage, or in-between), required qualification (no qualification, vocational training, or tertiary education), and the employment relationship, which distinguishes a standard employment relation (fulltime permanent employment or freelancer), a precarious employment relation (fixed-term, job creation scheme, minor employment, like so-called "mini-/midi-job"), and in-between employment relations (part-time employment with otherwise standard employment relation characteristics, and non-academic solo self-employed). These three indicators are classified into three labour market segments (high, intermediate, low). Jobs in the high labour market segment usually require at least a vocational degree, provide hourly wages above the median wage, and are permanent fulltime (or self-)employments. Jobs in the lower segment of the labour market are paid below two thirds of the median wage, do not require a vocational qualification, and mostly are precarious in terms of fixed-term employments or employments without social security contributions.

Jobs in the intermediate sector fall in-between and are mixed in terms of positive and negative characteristics in the three dimensions.[4]

Poverty is measured conventionally as relatively low income, using a threshold of 60% of the national median income (including East Germany since 1992, the first wave when annual income data was collected in East Germany). We use annual net household income, including an estimate of imputed rent, in order to account for the income advantage arising from home ownership or subsidized rents (Frick & Grabka, 2003). Thus, this measure accounts for the income advantage of students living in subsidized student housing, or for those reporting no rents at all. Net household income is needs-adjusted according to the new OECD scale (i.e., assigning a weight of 0.5 to every adult in addition to the household head and 0.3 to any child up to age 16). Although annual incomes refer to the calendar year prior to the time of the interview, we reference the year of data collection.

4. Adjusted poverty measure of potential inter-generational support

The conventional approach to income poverty assumes that all individuals living in the same household pool and share their economic resources, while separate households are seen as independent economic units. According to this premise, the same child from a wealthy parental home appears to be "wealthy" if still living with parents, but "poor" if living outside the parental home and on low income. This might be misleading because it implicitly assumes that parental support immediately stops when children leave home. Moreover, it ignores the fact that living independently, even if associated with some material losses, is an important step in the transition to adulthood. Independent residence is more prevalent among young adults originating from wealthier families than those from less well-off families, who tend to hinder and postpone this transition due to its high costs (Mayer, Müller & Pollak, 2007). Leaving the parental home, despite the decline in living standards, often increases life chances by offering young adults opportunities for independence and new experiences. Hence, the standard poverty measure runs the risk of artificially counting young adults as "poor", who in fact are on a life course trajectory from privileged families of origin, to advantageous social positions. This holds particularly true for university students from wealthy families. In many European societies, a period of university studies, marked by low economic resources and poor material living conditions, is a typical stage within upper class life-courses. Low economic resources and living standards are traditionally assumed to foster the character of the student, who follows the "deferred gratification pattern" of investment in human capital. Although this academic tradition might have weakened over time, it is still apparent in the economic situation of German university students.

In addressing youth poverty, it is important to clarify the underlying concept of poverty. The sociological definition of poverty, developed by Townsend (1979) and further refined by, amongst others, Mack and Lansley (1985) and Nolan and Whelan (1996) and adopted by the EU commission, focuses on exclusion from minimum acceptable living conditions and participation in society, due to a lack of economic resources. It is not the lack of economic resources as such that defines poverty, but the impact that the lack of resources forcefully exerts on living conditions and social participation. This conceptualization has spurred attempts to directly measure living conditions and participation, and to identify exclusion from these due to a lack of economic resources. As emphasized by Mack and Lansley (1985), the notion of poverty refers to the adverse impact of low economic resources on the future life chances of an individual. The standard approach to measuring poverty just serves as an approximation, or indirect measure of this risk. In the case discussed above, this approximation might systematically fail.[5]

The various kinds of inter-generational support that young adults might receive during their education, and during university studies in particular, are typically not well covered in surveys. As a household panel study, the dataset that we use offers a unique opportunity to consider potential inter-generational support, as parents and their children are tracked over time. Thus, we are able to link young adults with the parental homes that they have left. Although we do not know to what extent parents actually support their residentially independent children economically, the data enable a reasonable estimation.[6] The income data in the SOEP does contain information about incomes from "private transfers from other persons out of the household", which enters the computation of

household income that we use when measuring adult child poverty. Because there is a separate question for receiving alimony payments, it can be assumed that the private transfers received by independently living young adults are mainly transfers from their parents.

Table 1 provides descriptive statistics on the share of young adults living outside of their parents' home, who report receiving private transfers, and the average amount of these transfers as a percentage of their net equivalized incomes. In addition, we report respective figures for student loans provided by the German Government for trainees or students from low income families (so called "Bafög"). The first column of Table 1 reports the yearly net equivalized income for young adults (aged 15 to 30 years) in Euro (deflated to consumer prices of the year 2000). Individual incomes are almost equal for young adults in education or not working, whereas they are roughly 80% higher for those working. Almost half of the students do report receiving private transfers from other persons outside the household, but these transfers amount to only 22% of their net equivalized incomes. For those in vocational training, only 12% report receiving private transfers, but these make up only 3% of their overall budgets. Table 1 shows that the private transfers reported by young adults who left their parental homes are rather small.[7]

Table 1. Income, private transfers and student loans of young adults aged 15-30 years and living independently (2005-2012)

	equivalized income (in Euro as of 2000)	% share receiving private transfers	private transfers as % of equivalized income	% share receiving student loan (Bafög)	student loan as % of equivalized income	N
university studies	10,519	49%	22%	35%	14%	2,189
vocational training	10,757	12%	3%	23%	7%	825
not working	11,690	3%	1%	3%	1%	2,414
working	18,293	2%	0%	2%	0%	7,239
Total	15,308	10%	3%	9%	2%	12,667

SOEPv29, 2005-2012, weighted results.

However, on top of the regular payments that parents provide to their children and that are reported by the latter as "private transfers", young adults often receive irregular monetary and in-kind support by their parents. What is even more important, wealthy parents serve as a kind of safety net or insurance for their children even if they do not actually use or request economic support. Even if young adults originating from wealthy families do manage to live on restricted incomes while attending universities, they are not at risk of being or becoming socially marginalized or excluded because of inadequate resources. In other words, they are not *poor*.

To enable us to consider potential inter-generational support, and in the absence of complete information on the degree to which parents share their economic resources with their residentially independent children, we provide a lower-bound estimate of youth poverty based on the extreme assumption of complete income pooling. This "family-adjusted" measure of youth poverty is as much a lower-bound estimate of youth poverty as the "standard measure" of poverty can only provide an upper-bound estimate of youth poverty. We calculate the family-adjusted poverty measure by adding the incomes of parents and children who have moved out of the parental home, and dividing their total combined incomes by the sum of needs of both households (see Table 2 for an example). In other words, we assume income pooling, but we do not alter household needs because there are two independent households. The incomes of young adult children who reside with their parents are computed in the usual manner.

Table 2. Virtual income pooling of parents and residentially independent children – example

	income	needs	equivalized income – standard measure	equivalized income – adjusted measure
Parents (2 adults)	6300	1+0.5=1.5	6300/1.5=4200	(6300+800)/(1.5+1)=2840
Child	800	1	800/1=800	

This, of course, provides an upper bound estimate of the "true" welfare, since it assumes that parental and offspring incomes are fully shared when they live apart. This assumption most likely overestimates the share of resources that parents make available for their children. Moreover, we thereby also include income flows in the other direction, i.e., we assume that children help out their parents if the parents have fewer resources. In order to avoid double-counting the private transfers that young adults receive from their parents when they are reported by the parents as their own incomes, and again by the child as income, we deduct all "private transfers received from other persons outside the household" reported by the child when calculating the pooled income measure.

This adjustment is, of course, only possible for young adults whose parents still participate in the SOEP survey. Thus, young adults, who have already left the parental home but whose parents did not participate in the SOEP, are excluded from the sample when using the family-adjusted income measure. In cases where more than one parent is available (due to divorce and new partners), we assume income pooling with the mother, or if the mother is not available, with the (first) father.

Table 3 gives an overview – for the recent years 2005 to 2012 – of sample sizes and poverty rates based on the original and the family-adjusted measures, separated by living arrangements and availability of parental information. Very few young adults between the age of 15 and 19 have left the parental home. In the 20-25 year age-group, there are slightly more residentially independent young adults for whom we have parental information in the SOEP (452+2,305) as for those whom we do not (2,354) in the years 2005 to 2012. Between age 26 and age 30, there are many more young adults for whom we do not have parental information (5,062, compared to 3,589 for those whom at least one parent can be found in the SOEP). Comparing the unadjusted poverty rates for those young adults for whom we do and do not find parents in the SOEP, we see that those are almost the same (~20%) for young adults aged 26 to 30 years, but significantly lower (35% vs. 50%) for those without parents in the SOEP in the age group 20 to 25 years. This difference might be due to the fact that in the younger age group, those for whom we cannot find parents in the SOEP have left their parental home already some years ago and managed to live on their own incomes, as compared to those who left home more recently and for whom we can still find parents in the SOEP.

Table 3. Sample sizes and poverty rates before and after family adjustment (years 2005-2012)

		15 to 19	20 to 25	26 to 30	Total
Living with 1 parent	n	2,347	1,875	498	4,720
	%poor	42.0%	22.2%	12.0%	30.3%
Living with 2 parents	n	10,602	8,016	2,074	20,692
	%poor	13.7%	7.8%	7.8%	10.9%
Living independently					
1 parent in SOEP	n	30	452	604	1,086
	%poor	(85.0%)	52.8%	29.4%	41.3%
	%poor_adj	(50.3%)	38.2%	19.1%	28.6%
2 parents in SOEP	n	91	2,305	2,985	5,381
	%poor	(80.3%)	50.3%	20.5%	34.7%
	%poor_adj	(35.4%)	11.5%	5.0%	8.4%
No parents in SOEP	n	122	2,354	5,062	7,538
	%poor	32.1%	34.6%	20.3%	25.1%
Total	n	13,192	15,002	11,223	39,417
	%poor	20.9%	24.8%	19.6%	22.0%
Total (with parents in SOEP)	%poor_adj	38.7%	17.3%	7.8%	12.6%

SOEPv29, 2005-2012, weighted results.

As can be seen from Table 3, the impact of the family adjustment is large. For young adults aged 20 to 25 years for whom we do have information from both parents in the SOEP, the standard poverty rate is 50%, whereas the adjusted poverty rate comes down to almost 11.5%; for young adults aged 26 to 30 years, the family adjustment reduces poverty rates from 20.5% to 5%. In sum, almost 72% of the young adults (aged 15 to 30 years) who, based on the standard approach appear to be poor, are rendered non-poor once the available parental income information is taken into account. Again, as these figures demonstrate, this adjustment provides a lower-bound estimate of poverty rates of young adults, thus most likely underestimating true poverty rates. However, it also becomes clear that the standard approach provides an upper-bound estimate that obviously overestimates poverty of young adults who have already left the parental home.

In the following analysis, we report results based on the family-adjusted poverty measure in addition to results obtained from the standard poverty measure. Comparing the results reveals in greater detail, social class differences in the precursors and effects of youth poverty in the course of the transitions to adulthood. Given class-specific differences in the pathways to adulthood, we expect a stronger direct impact of social background on the precursors of youth poverty and a lower impact of the transitions to independent living, family formation and enrollment in tertiary education.

5. Youth poverty and youth transitions in Germany: trends over time

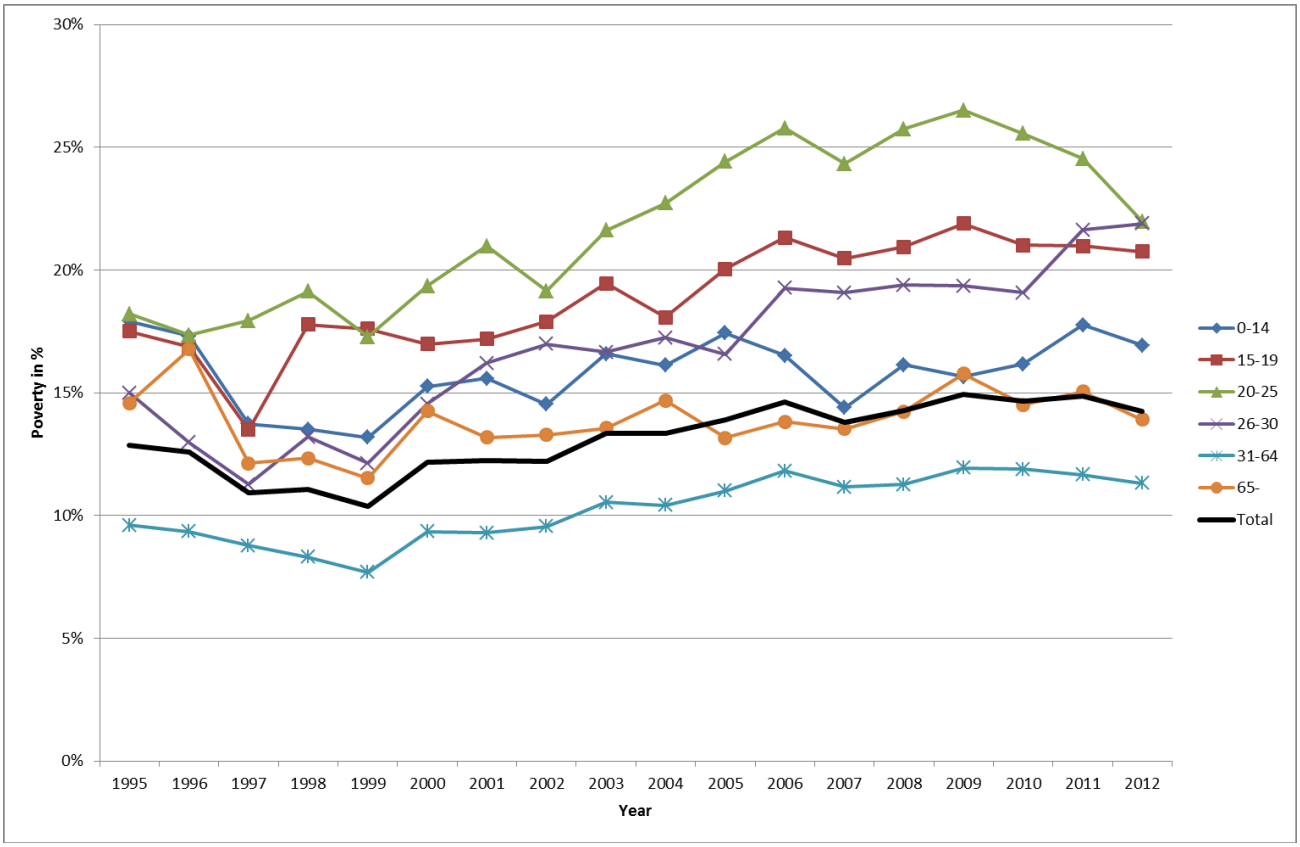
In Germany, poverty has risen for more than three decades (Groh-Samberg & Voges, 2012). After a period of low poverty during the 1960s and 1970s, poverty rates started to increase, fuelled by the stepwise increase of mass unemployment. A particularly large increase has taken place between 2000 and 2005. Figure 3 shows the time trend of (standard) poverty from 1995 to 2012 for the German population separated by age groups.

In West Germany before re-unification, poverty risks were typically U-shaped across age groups, with the highest poverty rates for children and the elderly. Only since the turn of the millennium has a new pattern emerged, with the highest poverty risks in the age group between 20 and 25 years. In recent years, poverty risks of those aged 20-25 years decreased again, remained stable in the younger (15-19 years) and further increased in the older (26-30 years) age group, so that these groups actually converged. For the others, and for the overall population, the trend since 2005 has been almost stable. For the age group of 26 to 30 years, however, the poverty increase during the 2000s was particularly strong. This indicates that the most vulnerable period is probably shifting over the life course towards extended post-adolescence. Whether this might be at least partly due to the Great Recession is difficult to answer from the simple descriptive picture.

However, as discussed above, the substantial increase in poverty among young adults might be a result of a statistical or at least demographic artefact. If more and more young adults leave their parental home for university studies or vocational education, the increase of poverty might simply reflect the growing prevalence and length of the educational phase. Time trends in post-secondary education and leaving the parental home support this conjecture: the age of leaving the parental home is decreasing and the educational enrollment of young adults is increasing over time. We also find a slightly U-shaped pattern of leaving the parental home by socio-economic status: Young adults from poorer as well as from very rich families leave their parental home earlier than those from middle class households. However, no significant change in this pattern can be found over time (cf. also Scherger, 2009; Leopold, Geißler & Pink, 2011).

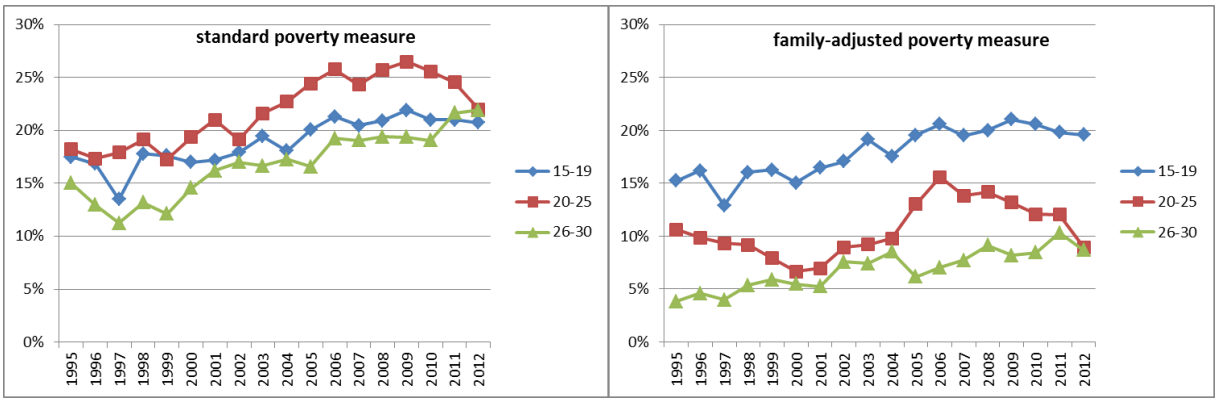
Figure 4 shows standard and adjusted poverty rates for the three age groups of 15-19 years, 20-25 years and 26-30 years. As can be seen, this revision clearly reduces the poverty rates of young adults and also eases the upward trend of poverty amongst young adults. Poverty rates remain almost unchanged for those aged 15 to 19 years, as there are only very few youth who have already left the parental home. For those aged 20 to 25 years, poverty rates are almost halved, and for those aged 26 to 30 years, the reduction is even stronger. The poverty risk for these two age groups is now below that of the age group of 15-19 years. However, we still find a significant increase of poverty over time.

Figure 3. Time trends of poverty in Germany 1995-2012, by age



SOEPv29, 1995-2012, weighted results.

Figure 4. Standard vs. family-adjusted poverty rates for young adults (1995-2012)



SOEPv29, 1995-2012, weighted results.

6. Potential precursors of youth poverty

To what extent is poverty during youth and young adulthood related to the patterns of transition to adulthood and to social class background? And can we observe significant changes in the ways youth poverty was and is affected by these factors? These two questions will be addressed using regression analysis of youth poverty. We start with an analysis of the potential antecedents of youth poverty and, in a second step, look into changes in these antecedents over time.

6.1. Potential precursors of youth poverty, 1995-2012

To analyze the potential precursors of poverty, we estimate a set of regression models based on a sample of youth and young adults aged 15 to 30 in the years from 1995 to 2012 using an unbalanced panel, i.e. of all individuals aged 15 to 30 years with at least one valid observation. The sample consists of more than 15,000 individuals with at least one, at maximum 16 and on average five observations. The first model is a simple pooled linear probability model (LPM), with Huber-White standard errors to account for heteroscedasticity and for the fact that observations are nested in persons. Second, we estimate a fixed effects panel regression (FE model). This model uses within-person variance to estimate the effect of independent variables net of unobserved individual heterogeneity. These effects can be interpreted as causal if the assumption holds that there are no unobserved time-varying factors correlated with any of the independent variables (Mood, 2010; see also Ermisch & Francesconi, 2001). However, the fixed effects model excludes all individuals who never experienced a change in poverty status, and it does not allow time-constant independent variables. Thus, this model is not well designed to capture causal effects that operate as constant social forces, e.g. in terms of "structuration" (Giddens, 1984). In order to retain time-constant factors and individuals with stable states, we thirdly estimate a hybrid panel regression model (HYBRID). This model is a random effects panel regression in which time-variant independent variables are split into a time-constant mean (capturing between-persons differences) and a time-dependent deviation from the mean (capturing the within-person variance that can be interpreted like that in a fixed effects model).

Although poverty is a binary response variable, and thus should be analyzed using logistic regressions, we present LPMs following the approach suggested by Mood (2010). The interpretation and comparison of LPM coefficients across models is more straightforward than for coefficients in logit models.[8] Thus, the coefficient of 0.103 for first generation migrants (Table 4, Column 1) can be interpreted as a 10.3 percentage points higher poverty rate for first generation migrants as compared to native Germans, everything else being equal. However, as Mood (2010) notes, this interpretation should be treated with caution, given that the magnitude of the coefficient depends on the baseline poverty rate for the respective reference group.

A comparison across these three models provides a comprehensive approach to analyzing potential precursors of poverty. By comparing the coefficients across model types, we can first assess how robust the results are. Moreover, comparing the between-persons and the within-persons effects, we get a grip on the potential causal direction: do youth transitions (e.g., entering university studies or becoming a parent) cause poverty, or does poverty render certain transitions more or less likely? Whereas the simple cross-sectional model shows the overall strength of the correlations between covariates and poverty, the fixed effects model reveals to what extent certain transitions impact on the risk of becoming or staying in poverty, as opposed to the selection of the poor into certain youth transitions.

We start with the results based on the standard poverty measure (left panel of Table 4). The results show that women and West Germans have a slightly lower poverty risk than men and East Germans, and migrants, in particular first generation migrants, have higher probabilities of being poor. Social background has a very strong impact, both in terms of parental education and (father's) social class. Although parental education and father's social class are highly correlated, we find strong significant effects for both measures of social background. Poverty risks for youth originating from unskilled worker households are about 8 percentage points higher than for youth originating from higher service class households; and the difference between low-skilled versus university education backgrounds is 14 percentage points.

Turning to the youth transitions, we find strong effects as well. Leaving the parental home has a huge positive impact on poverty, both between and within persons. When leaving the parental home, poverty risks increase by more than 40 percentage points. This confirms that young adults who left their parental home, live on lower economic resources than those who still live in the parental household. On the other hand, cohabitation has a protective effect, again both between and within persons. Thus, when young adults leave the parental home to immediately form a couple household, both effects seem to be countervailing

Table 4. Determinants of youth poverty

		standard measure				family-adjusted measure			
		LPM	HYBRID		FE	LPM	HYBRID		FE
			between	within			between	within	
		(1)	(2a)	(2b)	(3)	(4)	(5a)	(5b)	(6)
Sex (Ref: male)	female	-0.010**	-0.011***			0.003	0.001		
		(0.0040)	(0.0041)			(0.0044)	(0.0045)		
Migrant (Ref: no)	1st generation	0.103***	0.103***			0.115***	0.112***		
		(0.0096)	(0.0076)			(0.0115)	(0.0087)		
	2nd generation	0.042***	0.037***			0.032***	0.029***		
		(0.0069)	(0.0063)			(0.0074)	(0.0065)		
Region (Ref: West-Germany)	East-Germany	0.015***	0.00207			0.022***	-0.001		
		(0.0049)	(0.00476)			(0.0053)	(0.0050)		
Parental education (Ref: max. lower secondary)	lower sec. + voc. training	-0.069***	-0.071***			-0.083***	-0.086***		
		(0.0115)	(0.0086)			(0.0138)	(0.0096)		
	intermediate sec. + voc.	-0.116***	-0.113***			-0.148***	-0.144***		
	training	(0.0116)	(0.0090)			(0.0140)	(0.0099)		
	upper sec. + voc. training	-0.127***	-0.126***			-0.165***	-0.163***		
		(0.0132)	(0.0117)			(0.0155)	(0.0130)		
	university	-0.138***	-0.138***			-0.188***	-0.182***		
		(0.0120)	(0.0097)			(0.0142)	(0.0108)		
Parental social class (Ref: high service)	low service	0.003	0.000			0.009**	0.008		
		(0.0053)	(0.0071)			(0.0047)	(0.0078)		
	routine non-manual	0.027***	0.026***			0.034***	0.036***		
		(0.0080)	(0.0089)			(0.0086)	(0.0098)		
	self-employed	0.022***	0.019**			0.023***	0.027***		
		(0.0073)	(0.0086)			(0.0063)	(0.0093)		
	skilled manual	0.021***	0.020***			0.028***	0.037***		
		(0.0060)	(0.0073)			(0.0058)	(0.0080)		
	unskilled manual	0.077***	0.076***			0.100***	0.113***		
		(0.0069)	(0.0075)			(0.0073)	(0.0083)		
Leaving parental home (Ref: with parents)	left home	0.415***	0.386***	0.411***	0.413***	0.072***	0.095***	0.028***	0.028***
		(0.0076)	(0.00890)	(0.0051)	(0.0052)	(0.0066)	(0.0119)	(0.0044)	(0.0044)
Cohabitation (Ref: no partner)	cohabitation	-0.253***	-0.232***	-0.228***	-0.227***	-0.059***	-0.071***	-0.031***	-0.030***
		(0.0074)	(0.00909)	(0.0053)	(0.0053)	(0.0071)	(0.0146)	(0.0050)	(0.0050)
Children (Ref: no child)	children	0.033***	0.0471***	-0.010	-0.001	0.024***	0.017	-0.001	-0.002
		(0.0065)	(0.00835)	(0.0064)	(0.0064)	(0.0088)	(0.0131)	(0.0062)	(0.0062)
Education (Ref: not in education)	in school	-0.006	0.003	-0.008	-0.011*	0.010	0.009	0.023***	0.023***
		(0.0073)	(0.0137)	(0.0056)	(0.0057)	(0.0074)	(0.0162)	(0.0049)	(0.0049)
	in vocational training	0.024***	0.044***	0.023***	0.022***	-0.013**	-0.019	-0.001	-0.002
		(0.0065)	(0.014)	(0.0050)	(0.0050)	(0.0065)	(0.0167)	(0.0044)	(0.0044)
	in university	0.104***	0.159***	0.085***	0.085***	-0.015**	-0.027	0.007	0.006
		(0.0080)	(0.0139)	(0.0061)	(0.0062)	(0.0071)	(0.0177)	(0.0054)	(0.0054)
Employment (Ref: not working)	unemployed	0.128***	0.289***	0.034***	0.035***	0.073***	0.174***	0.016***	0.016***
		(0.0097)	(0.0174)	(0.0064)	(0.0064)	(0.0109)	(0.0229)	(0.0059)	(0.0059)
	precarious labour market	0.004	0.022	-0.005	-0.004	-0.018**	-0.020	-0.023***	-0.024***
		(0.0083)	(0.0163)	(0.0061)	(0.0061)	(0.0087)	(0.0211)	(0.0056)	(0.0056)
	intermediate labour market	-0.099***	-0.113***	-0.055***	-0.053***	-0.071***	-0.119***	-0.030***	-0.030***
		(0.0068)	(0.0132)	(0.0055)	(0.0055)	(0.0069)	(0.0177)	(0.0051)	(0.0051)
	higher labour market	-0.155***	-0.155***	-0.094***	-0.092***	-0.085***	-0.117***	-0.033***	-0.033***
		(0.0069)	(0.0125)	(0.0060)	(0.0060)	(0.0072)	(0.0166)	(0.0055)	(0.0056)
Age		-0.015***	-0.015***		-0.011***	-0.007***	-0.006***		-0.002***
		(0.0007)	(0.0006)		(0.0006)	(0.0007)	(0.0006)		(0.0005)
Year		0.005***	0.004***			0.004***	0.004***		
		(0.0004)	(0.0004)			(0.0004)	(0.0005)		
Constant		0.352***	0.363***		0.321***	0.245***	0.233***		0.142***
		(0.0207)	(0.0195)		(0.0134)	(0.0221)	(0.0211)		(0.0118)
Observations		75,464	75,464		75,464	61,672	61,672		61,672
Number of persons		15,269	15,269		15,269	11,407	11,407		11,407
R-squared (overall)		0.196	0.208		0.138	0.118	0.127		0.018
R-squared between			0.233		0.125		0.175		0.024
R-squared within			0.113		0.113		0.009		0.009

*Source: SOEPv29, 1995-2012, own calculation. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.*

or to at least partially reduce one another. Interestingly, parenthood has no clear effect. Although having children is associated with higher poverty risks according to the simple LPM model and the between-effect of the HYPBRID model (Columns 1 and 2a), there is no such effect in the fixed effects part of the HYBRID model and the FE model (Columns 2b and 3). In other words, it is not the newborn baby that causes poverty for young families. Rather, poor young adults have a higher probability of having a child. This result corresponds to research findings showing that unemployment can serve as a trigger for childbirth for poorly educated women (Düntgen & Diewald, 2007).

Educational enrollment and labour market participation exert strong and consistent effects as well. Taking up vocational training and university studies clearly increases the likelihood of poverty when measured conventionally. With an increase of 8 percentage points, this effect is more pronounced for taking up university education than for vocational training (2 percentage points). This supports our expectation that university studies serve as a status passage which is coupled with low living standards. Regarding labour market participation, being unemployed has a huge impact on poverty when compared to persons who are not unemployed. The effect is still there, but strongly reduced in the fixed effects perspective, indicating that poverty does not only follow unemployment but also often precedes unemployment. On the other hand, a consistent protective effect against poverty can be found for taking up a job in the higher or intermediate labour market segments. The effects for precarious jobs are not statistically different from not working.

We have estimated two complete sets of regression models based on the standard and on the family-adjusted poverty measure.[9] We expect that the results based on the adjusted measure will boost the effects of social origin and at least partially downsize those for the five youth transitions, in particular leaving the parental home and taking up university studies. These expectations are largely confirmed. We find the effects of parental education and social class to be much stronger based on the family-adjusted poverty measure. In contrast, the effects of youth transitions are downsized or even disappear. The huge poverty enhancing impact of leaving the parental home and the protective effect of cohabitation are strongly reduced from around 40 to only 3 percentage points in the fixed effects model. These results clearly indicate that students enrolled at universities overwhelmingly originate from wealthier parental backgrounds (see Mayer, Müller & Pollak, 2007), and follow the "deferred gratification pattern" during the investment period in human capital. The positive effects for entering vocational training or university studies almost disappear. There is even a reverse protective effect for being in vocational training or university in the LPM model (Column 4); however, this does not hold for the within-person variance. Thus, participation in post-secondary and tertiary education itself has no poverty enhancing or reducing effect once potential inter-generational support is accounted for. What remain unchanged are the negative effects of unemployment and the protective effects of employment. Even precarious employment in the lower labour market shows a consistent, albeit small protective effect against poverty in a longitudinal perspective. Again, although youth poverty is strongly correlated with having children, in a longitudinal perspective the transition to parenthood exerts much less impact on poverty than could have been expected from the simple correlations.

Finally, all models in Table 4 include age as a continuous variable. The consistently negative and significant coefficient for age in all models indicates an endogenous trend of "growing out of poverty" with age. Given the n-shaped age-pattern of poverty, we checked for non-linear age effects by including age squared, but omitted this variable because it was not significant. Once controlling for the transitions to adulthood, like leaving home, attending education and entering the labour market, we find evidence that young adults might follow an endogenous developmental path out of the risk zone of poverty. Second, we find a significant positive effect of time in the LPM models (given that change in age and change in time are perfectly collinear, they cannot be disentangled in the FE models). This indicates that the increase in poverty of youth and young adults cannot simply be reduced to compositional changes (at least with respect to the characteristics included in our models). Even after controlling for social background and the "big five" youth transitions, the transition to adulthood has become more risky over time in Germany. However, the models presented

so far assume that there are no changes in the precursors of poverty over the period of study – this needs further elaboration.

6.2 Changes over time

The long-term increase of youth poverty has not accelerated during the recent economic crisis in Germany. On the contrary, poverty rates have declined at least for young adults aged 20 to 25 – and this decline is even steeper for the family-adjusted poverty measure (see above, Figure 4). The question then is: How can we explain these trends? Did the correlates of poverty change during the steep increase of youth poverty between 2000 and 2005 and the period before and after? Has the recent recession affected the determinants of youth poverty? In order to address these questions, and to account for potential non-linear time changes, we analyze youth poverty for three time periods with differing poverty trends: The first period is 1995 to 2000, when youth poverty rates for those aged 15 to 30 years were almost stable at a level of about 16%. During the second period from 2001 to 2006, poverty rates sharply increased from 16% to 22%, and remained at this high level for most of the third period between 2007 and 2012. We only report LPM models to search for robust changes in the correlates of youth poverty. As before, we estimate the regressions based on the standard and adjusted poverty measures. Results are given in Table 5.

Resembling the results from the previous regressions, we find only very weak effects for gender and region, but strong effects for migrants, in particular first generation migrants, and social background. In fact, the impact of social background is increasing over time. This increase is even stronger for the family-adjusted poverty measure than for the conventional approach. This is true for parental education as well as for class background. This pattern indicates the growing significance of social inequality for the stratification of youth poverty risk. On the other hand, youth transitions again strongly affect poverty risk, but these effects are rather stable over time, and they are again less pronounced for the family-adjusted poverty measure. Whereas university studies are increasingly correlated with poverty, based on the standard poverty measure, there is no significant correlation between university studies and the family-adjusted measure of poverty. For vocational training, the increasing correlation with the standard poverty measure even turns into a significantly negative correlation for the family-adjusted measure of poverty. The only increasing correlation that remains in place when poverty is corrected for inter-generational support is for unemployment. For precarious jobs in the lower segment of the labour market, we only find significant effects in the last time period, which are positive for the standard poverty measure but negative for the family-adjusted poverty measure.

To summarize, the regression models for the three time periods reveal that the risks of poverty during the transition to adulthood are becoming increasingly determined by social stratification. This is reflected in the increasing impact of social origin, whereas the impacts of youth transitions remain rather stable over time. However, this trend seems to be rather continuous instead of jumpy or sudden. This is, of course, what we would expect when considering social class effects. Rising youth poverty in Germany seems to be an outcome of structural changes in social stratification, changes that appear to operate rather slowly, but “in the depth” of social reality.

Table 5. Period change in the correlates of youth poverty

		standard measure			family-adjusted measure		
		1995-2000	2001-2006	2007-2012	1995-2000	2001-2006	2007-2012
Sex (Ref: male)	female	-0.012**	-0.003	-0.016**	0.000	0.003	0.007
		(0.0061)	(0.0057)	(0.0064)	(0.0065)	(0.0059)	(0.0065)
Migrant (Ref: no)	1st generation	0.115***	0.107***	0.074***	0.122***	0.125***	0.100***
		(0.0136)	(0.0140)	(0.0160)	(0.0147)	(0.0166)	(0.0192)
	2nd generation	0.050***	0.027***	0.048***	0.037***	0.019*	0.039***
		(0.0106)	(0.0103)	(0.0108)	(0.0106)	(0.0104)	(0.0108)
Region (Ref: West-Germany)	East-Germany	0.005	0.017**	0.013*	0.000	0.023***	0.034***
		(0.0070)	(0.0069)	(0.0081)	(0.0072)	(0.0069)	(0.0082)
Parental education (Ref: max. lower secondary)	lower sec. + voc. training	-0.057***	-0.059***	-0.127***	-0.065***	-0.082***	-0.162***
		(0.0137)	(0.0175)	(0.0258)	(0.0151)	(0.0211)	(0.0300)
	intermed.sec.+voc.training	-0.071***	-0.109***	-0.203***	-0.083***	-0.153***	-0.262***
		(0.0148)	(0.0174)	(0.0253)	(0.0166)	(0.0208)	(0.0294)
	upper sec. + voc. training	-0.097***	-0.123***	-0.196***	-0.117***	-0.161***	-0.267***
		(0.0183)	(0.0197)	(0.0268)	(0.0189)	(0.0232)	(0.0308)
	University	-0.113***	-0.126***	-0.212***	-0.137***	-0.185***	-0.292***
		(0.0151)	(0.0179)	(0.0258)	(0.0165)	(0.0211)	(0.0297)
Parental social class (Ref: high service)	low service	-0.020**	0.007	0.012	0.000	0.009	0.017**
		(0.0083)	(0.0076)	(0.0084)	(0.0063)	(0.0062)	(0.0071)
	routine non-manual	0.007	0.036***	0.029**	0.026**	0.042***	0.029***
		(0.0121)	(0.0118)	(0.0117)	(0.0118)	(0.0118)	(0.0108)
	self-employed	0.013	0.014	0.036***	0.029**	0.013*	0.029***
		(0.0122)	(0.0098)	(0.0115)	(0.0114)	(0.0076)	(0.0103)
	skilled manual	-0.005	0.026***	0.037***	0.013	0.026***	0.043***
		(0.0090)	(0.0086)	(0.0100)	(0.0078)	(0.0076)	(0.0097)
	unskilled manual	0.050***	0.084***	0.087***	0.086***	0.099***	0.106***
		(0.0101)	(0.0098)	(0.0115)	(0.0096)	(0.0095)	(0.0121)
Leaving parental home (Ref: with parents)	leaving home	0.324***	0.438***	0.462***	0.058***	0.078***	0.072***
		(0.0128)	(0.0115)	(0.0113)	(0.0106)	(0.0096)	(0.0099)
Cohabitation (Ref: no partner)	cohabitation	-0.198***	-0.276***	-0.260***	-0.049***	-0.069***	-0.056***
		(0.0122)	(0.0115)	(0.0116)	(0.0110)	(0.0099)	(0.0116)
Children (Ref: no child)	children	0.034***	0.024**	0.047***	0.005	0.028**	0.031*
		(0.0088)	(0.0104)	(0.0124)	(0.0100)	(0.0126)	(0.0178)
Education (Ref: not in education)	in school	0.013	-0.013	0.022	0.010	-0.031**	-0.009
		(0.0156)	(0.0124)	(0.0145)	(0.0154)	(0.0123)	(0.0143)
	in vocational training	0.004	0.031***	0.034***	-0.021*	-0.011	-0.020*
		(0.0118)	(0.0100)	(0.0113)	(0.0118)	(0.0097)	(0.0112)
	in university	0.073***	0.102***	0.118***	-0.013	0.002	-0.018
		(0.0146)	(0.0123)	(0.0133)	(0.0131)	(0.0104)	(0.0125)
Employment (Ref: not working)	unemployed	0.061***	0.109***	0.205***	0.018	0.069***	0.129***
		(0.0165)	(0.0142)	(0.0175)	(0.0161)	(0.0152)	(0.0207)
	precarious employment	-0.006	-0.019	0.027*	-0.015	-0.012	-0.024*
		(0.0148)	(0.0128)	(0.0141)	(0.0156)	(0.0129)	(0.0140)
	intermediate segment	-0.103***	-0.107***	-0.087***	-0.071***	-0.063***	-0.075***
		(0.0110)	(0.0103)	(0.0125)	(0.0115)	(0.00978)	(0.0127)
	higher labour market seg.	-0.137***	-0.161***	-0.173***	-0.090***	-0.073***	-0.094***
		(0.0108)	(0.0105)	(0.0126)	(0.0114)	(0.0103)	(0.0129)
Age		ok	ok	ok	ok	ok	ok
Year		ok	ok	ok	ok	ok	ok
Constant		0.175***	0.243***	0.278***	0.177***	0.298***	0.344***
		(0.0245)	(0.0243)	(0.0312)	(0.0244)	(0.0264)	(0.0345)
Observations		22,531	29,026	23,907	18,055	23,884	19,733
R-squared		0.149	0.202	0.236	0.111	0.123	0.143

*SOEPv29, 1995-2012.Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1*

Resembling the results from the previous regressions, we find only very weak effects for gender and region, but strong effects for migrants, in particular first generation migrants, and social background. In fact, the impact of social background is increasing over time. This increase is even stronger for the family-adjusted poverty measure than for the conventional approach. This is true for parental education as well as for class background. This pattern indicates the growing significance of social inequality for the stratification of youth poverty risk. On the other hand, youth transitions again strongly affect poverty risk, but these effects are rather stable over time, and they are again less pronounced for the family-adjusted poverty measure. Whereas university studies are increasingly correlated with poverty, based on the standard poverty measure, there is no significant correlation between university studies and the family-adjusted measure of poverty. For vocational training, the increasing correlation with the standard poverty measure even turns into a significantly negative correlation for the family-adjusted measure of poverty. The only increasing correlation that remains in place when poverty is corrected for inter-generational support is for unemployment. For precarious jobs in the lower segment of the labour market, we only find significant effects in the last time period, which are positive for the standard poverty measure but negative for the family-adjusted poverty measure.

To summarize, the regression models for the three time periods reveal that the risks of poverty during the transition to adulthood are becoming increasingly determined by social stratification. This is reflected in the increasing impact of social origin, whereas the impacts of youth transitions remain rather stable over time. However, this trend seems to be rather continuous instead of jumpy or sudden. This is, of course, what we would expect when considering social class effects. Rising youth poverty in Germany seems to be an outcome of structural changes in social stratification, changes that appear to operate rather slowly, but “in the depth” of social reality.

7. Long-term consequences of youth poverty for adult poverty

We now switch the perspective from precursors to outcomes of youth poverty. If the transition to adulthood in Germany has become more risky and uncertain, and youth poverty increased significantly due to rising inequalities, we now assess the impact of youth poverty on poverty risks in later life. To analyze life-course effects of poverty during youth and young adulthood, we construct balanced panels of ten years for various age brackets. The first panel runs from ages 10 to 20, the second panel from ages 14 to 24, the third from ages 18 to 28, and the fourth from ages 22 to age 32. The dependent variable is an extended poverty measure at the last year of these panels. To give a more valid measure of poverty, the dependent variable only equals one if the individual is in poverty (as gauged by the standard measure), is not enrolled at a university and is not employed in the higher labour market segment.[10] The independent variable of interest counts the years in poverty during the first five years of the respective ten year period. Thus, the first panel estimates the probability of being poor at age 20 conditional on the years spent in poverty between age 10 and age 14; the last panel, accordingly, estimates the probability of being poor at age 32 dependent on the years spent in poverty during ages 22 to 26. Moreover, we control for gender, migration, region, parental education, and time period.

Table 6 shows that years spent in poverty during the first five years of each ten-year period have the expected strong effect on poverty at the 10th year. These effects appear to operate in all four age ranges. However, comparing the coefficients across age ranges reveals that the life-course effects of poverty are more pronounced in earlier stages of the life-course. Experiencing three to five years of poverty between ages 10 to 15 leads to an increased risk of being poor at age 20 of almost 28 percentage points. This effect decreases to 23, 17 and 19 percentage points if evaluated between ages 14 to 24, 18 to 28, and 22 to 32, respectively. The impacts of temporary poverty experiences of one to two years on later life poverty, decrease even more from 15 percentage points to 5-8 percentage points for all later age ranges. This pattern indicates that the “state-dependency” of poverty weakens during the phase of transition to independent living.

Social background, measured by parental education, also shows a strong impact. Comparing the impact of social background across the four age ranges, we again find a slightly u-shaped pattern: The effect slightly decreases over the first three age

bands, but then clearly catches-up again with the first age range. This pattern seems to contradict or at least extend the life course hypothesis developed by Blossfeld and Shavit (1993). The transition phase to independent living seems to shake-up or loosen the impact of social origin only slightly, but returns to its full power once the transition phase has come to an end – at least insofar as poverty risks are concerned.

Furthermore, women and East Germans have higher probabilities of being poor at the end of the ten year period after controlling for previous childhood or youth poverty. For migrants, there is an effect only for the two later life-course periods. Although women are, if at all, slightly less likely to become poor during the transition to adulthood (see Table 4, above), those who do have less often experienced poverty spells during (late) childhood.

Finally, the dummy for time periods shows a significant increase in poverty for the most recent period from 2009 to 2012, at least for the first three age groups. The fact that there is no significant increase for the fourth age range (from age 22 to age 32) might indicate that at age 22 to 26, youth might have already passed by the most troublesome and vulnerable ages that have been hit most by the recent labour market trends. Further testing for increasing effects of parental education or years spent in poverty over time did not show any significant results.

Table 6. Life course effects of youth poverty on poverty risks in later life

		10-20	14-24	18-28	22-32
Years in poverty (Ref: none)	1-2 years	0.151***	0.0531***	0.0789***	0.0636***
		(0.0186)	(0.0165)	(0.0148)	(0.0137)
	3-5 years	0.284***	0.229***	0.168***	0.185***
		(0.0197)	(0.0168)	(0.0181)	(0.0171)
Sex (Ref: male)	female	0.032***	0.027**	0.016	0.027**
		(0.0122)	(0.0110)	(0.0115)	(0.0106)
Region (Ref: West Germany)	East Germany	0.034*	0.046***	0.063***	0.040**
		(0.0176)	(0.0161)	(0.0177)	(0.0163)
Migration (Ref: no)	migrant	-0.007	-0.004	0.025*	0.030**
		(0.0155)	(0.0139)	(0.0145)	(0.0137)
Parental education (Ref: elementary)	lower secondary	-0.033	-0.005	-0.016	-0.054***
		(0.0228)	(0.0197)	(0.0191)	(0.0167)
	upper secondary	-0.087***	-0.048**	-0.038*	-0.082***
		(0.0234)	(0.0208)	(0.0203)	(0.0183)
	tertiary	-0.107***	-0.079***	-0.087***	-0.120***
		(0.0254)	(0.0230)	(0.0225)	(0.0202)
Time period (Ref: 1993-96)	1997-2000	0.005	0.033*	0.014	-0.035**
		(0.0226)	(0.0187)	(0.0174)	(0.0169)
	2001-04	0.020	0.043**	0.003	-0.009
		(0.0218)	(0.0185)	(0.0189)	(0.0172)
	2005-08	0.031	0.085***	0.025	-0.009
		(0.0215)	(0.0185)	(0.0190)	(0.0186)
	2009-12	0.048**	0.060***	0.051***	-0.007
		(0.0214)	(0.0177)	(0.0185)	(0.0184)
Constant		0.023	-0.063*	-0.050	0.017
		(0.0375)	(0.0326)	(0.0326)	(0.0300)
Observations		2,525	2,226	2,012	2,130
R-squared		0.126	0.116	0.083	0.091

SOEPv29, 1984-2012, balanced 10-years panels. Robust standard errors in parentheses.
**** p<0.01, ** p<0.05, * p<0.1*

Summing up, we find strong and persistent effects of youth poverty on poverty risks in the later life-course. This effect is manifest across ten years and when controlling for socio-demographic characteristics. In particular, we find that both earlier poverty experiences during youth and parental background have independent and strong effects on poverty in later life. We also checked for interactions between parental education and earlier poverty experiences, but those were not significant. In other words, poverty experiences during childhood and youth have the same detrimental impact on later life poverty risks in all educational groups or social classes. In line with the findings of the previous sections, we find that poverty risks increased over time even when controlling for earlier poverty experiences.

Interestingly, these results, based on the standard poverty measure, are almost the same for the family-adjusted poverty measure. This indicates that poverty experiences during youth transitions have a consistent detrimental impact. Even children from wealthier backgrounds have higher risks of later-life poverty, compared to their peers who have not experienced poverty during the transition to adulthood.

8. Conclusion

In Germany, poverty has been increasing for almost three decades, with a particularly strong acceleration of this increase between 1999 and 2005. A major consequence and driver of this increase is the "solidification" of poverty; poverty has become increasingly persistent for growing parts of the population (see Groh-Samberg, 2013). These trends are seemingly unrelated to the recent Great Recession. The steepest increase in poverty took place years before the onset of the economic crisis of 2008, and there has been no further rise in poverty since the crisis began (Grabka, Goebel & Schupp, 2012). This provides a puzzle for comparative cross-national analysis of the impact of the economic crisis and uncertainty of youth transitions. Although we cannot contribute to solving this puzzle, the results presented in this paper clearly show that youth transitions have become increasingly risky and difficult in Germany – to an extent that might very well be comparable to other countries that have been more deeply hit by the Great Recession.

We find that poverty increased significantly in Germany, even if we take into account inter-generational support by means of virtual income pooling of parents and their residentially independent children. Poverty risks are differently related to the "big five" transitions to adulthood. Leaving the parental home and entering unemployment strongly increase poverty risks, whereas cohabitation and employment in the higher labour market segments are strong protectors against poverty. The transition to parenthood, educational participation and precarious employment are not consistently related to poverty risks once we control for inter-generational support. However, whereas the impact of these transitions does not change over time, we find that social background has a strong and increasing impact on poverty risks. Moreover, we also find that social background and poverty experiences during youth, strongly affect poverty risks later in life. This life-course effect seems to weaken throughout the period of youth transitions. Overall, these results clearly point towards an increasingly persistent inter-generational trans-mission of poverty and life course risks.

Acknowledgements

We are very grateful to Jeylan Mortimer for her careful and critical reading of the text and for her helpful comments. We also like to thank three anonymous reviewers for their helpful comments, as well as Ingrid Schoon, John Bynner and the participants of the network "Youth in the Great Recession" for suggestions on earlier versions of this paper. This research has been partially supported by EU-FET grant InGrid (312691).

References

Allison, P. (1999). Comparing Logit and Probit Coefficients Across Groups. *Sociological Methods and Research*, 28, 186-208. http://dx.doi.org/10.1177/0049124199028002003

Baethge, M., Solga, H., & Wieck, M. (2007). *Berufsbildung im Umbruch – Signale eines überfälligen Aufbruchs.* Berlin: Friedrich-Ebert-Stiftung.

Bell, D. N. F., & Blanchflower, D. G. (2011). Youth unemployment in Europe and the United States. *Nordic Economic Policy Review, 1*, 11-38.

Blossfeld, H.-P., Buchholz, S., Bukodi, E., & Kurz, K. (2008). *Young Workers, Globalization and the Labor Market. Comparing Early Working Life in Eleven Countries*. Cheltenham: Edward Elgar.

Blossfeld, H.-P., & Shavit, Y. (Eds.). (1993). *Persistent Inequality. Changing Educational Attainment in Thirteen Countries*. Boulder: Westview Press.

Breen, R., Karlson, K. B., & Holm, A. (2013). Total, Direct, and Indirect Effects in Logit and Probit Models. *Sociological Methods & Research, 42*, 164-191. http://dx.doi.org/10.1177/0049124113494572

Buchholz, S., & Kurz, K. (2008). A New Mobility Regime in Germany? Young People's Labor Market Entry and Phase of Establishment Since the Mid-1980s. In H.-P. Blossfeld, S. Buchholz & K. Kurz (2008), *Young Workers, Globalization and the Labor Market. Comparing Early Working Life in Eleven Countries* (pp. 51-75). Cheltenham: Edward Elgar.

Cahuc, P., Carcillo, S., Rinne, U., & Zimmermann, K. F. (2013). *Youth Unemployment in Old Europe: The Polar Cases of France and Germany*. IZA Discussion Paper No. 7490, Bonn.

Dallinger, U., & Walter, W. (1999). *Bericht zur Lage der Generationen. Ifb - Materialien zur Tagung „Erstes, zweites, drittes Lebensalter*. Perspektiven der Generationenarbeit“ in der Akademie für politische Bildung, Tutzing.

Diewald, M., & Sill, S. (2004). Mehr Risiken, mehr Chancen? Trends in der Arbeitsmarktmobilität seit Mitte der 1980er Jahre. In O. Struck & Ch. Köhler (Eds.), *Beschäftigungsstabilität im Wandel?* (pp. 39-62). München/Mering: Hampp.

Düntgen, A., & Diewald, M. (2007). Auswirkungen der Flexibilisierung von Beschäftigung auf eine erste Elternschaft. In M. Szydlik (Ed.), *Flexibilisierung. Folgen für Arbeit und Familie* (pp. 213-231). Wiesbaden: VS Verlag für Sozialwissenschaften.

Erikson, R., & Goldthorpe, J.H. (1992). *The constant flux: a study of class mobility in industrial societies*. Oxford: Clarendon Press.

Ermisch, J. F., & Francesconi, M. (2001). Family structure and children's achievements. Journal of Population Economics, 14, 249-270. http://dx.doi.org/10.1007/s001480000028

European Commission (2009). Communication to the Council on An EU Strategy for Youth – Investing and Empowering. A renewed open method of coordination to address youth challenges and opportunities. COM(2009) 200. Brussels, 27.4.2009.

European Commission (2011). Commission Staff Working Document On EU Indicators in the field of youth. SEC(2011) 401. Brussels, 25.03.2011.

Frick, J. R., & Grabka, M. M. (2003). Imputed Rent and Income Inequality: A Decomposition Analysis for the U.K., West Germany, and the USA. *The Review of Income and Wealth, 49*, 513-537. http://dx.doi.org/10.1111/j.0034-6586.2003.00102.x

Gebel, M., & Giesecke, J. (2009). Ökonomische Unsicherheit und Fertilität. Die Wirkung von Beschäftigungsunsicherheit und Arbeitslosigkeit auf die Familiengründung in Ost- und Westdeutschland. *Zeitschrift für Soziologie, 38*, 399-418.

Giddens, A. (1984). *The constitution of society: Outline of the theory of structuration*. Cambridge: Polity Press.

Giesecke, J., & Heisig, J. P. (2011). Destabilization and Destandardization: For Whom? The Development of West German Job Mobility since 1984. Schmollers Jahrbuch. *Zeitschrift für Wirtschafts- und Sozialwissenschaften, 131*, 301-314.

Giesselmann, M. (2009). Arbeitsmarktpolitischer Wandel in Deutschland seit 1991 und das Working Poor - Problem: Einsteiger als Verlierer des Reformprozesses? *Zeitschrift für Soziologie, 38*, 215-238.

Giesselmann, M., & Lohmann, H. (2008). The different roles of low-wage work in Germany: regional, demographical and temporal variances in the poverty risk of low-paid workers. In H.-J. Andreß & H. Lohmann (Eds.), *The Working Poor in Europe. Employment, Poverty and Globalization* (pp. 96-123). Cheltenham: Edward Elgar. http://dx.doi.org/10.4337/9781848443761.00012

Gottschall, K., & Bird, K. (2003). Family Leave Policies and Labor Market Segregation in Germany. Reinvention or Reform of the Male Breadwinner? *Review of Policy Research - Special Issue on Gender and Work Place Policies, 20*, 115 – 134. doi: 10.1111/1541-1338.00007. http://dx.doi.org/10.1111/1541-1338.00007

Grabka, M. M., Goebel, J., & Schupp, J. (2012). Höhepunkt der Einkommensungleichheit in Deutschland überschritten? *Wochenbericht Nr. 43* des DIW Berlin, Berlin, 3-15.

Grabka, M. M., & Frick, J.R. (2013). Country case study – Germany. In S. P. Jenkins, A. Brandolini, J. Micklewright & B. Nolan (Eds.), *The great recession and the distribution of household income* (pp. 90-112). Oxford: Oxford University Press.

Grabka, M. M., & Frick, J.R. (2010). Weiterhin hohes Armutsrisiko in Deutschland: Kinder und junge Erwachsene sind besonders betroffen. *Wochenbericht Nr. 7* des DIW, Berlin, 2-11.
Groh-Samberg, O. (2013). *The New Poverty: Trends and Debates in Contemporary Germany. In L. Raphael (Ed.), Poverty and Welfare in Modern German history*. New Perspectives in Current Research, Oxford: Berghahn (in print)
Groh-Samberg, O., & Voges, W. (2012). Armut und soziale Ausgrenzung. In S. Mau & N.M. Schöneck (Eds.), *Handwörterbuch zur Gesellschaft Deutschlands* (pp. 58-79). Springer: VS.
Keeley, B., & Love, P. (2010). *From crisis to recovery. The causes, course and consequences of the great recession*. Paris: OECD. http://dx.doi.org/10.1787/9789264077072-en
Kurz, K., Steinhage, N., & Golsch, K. (2005). Case Study Germany. Global competition, uncertainty and the transition to adulthood. In H.-P. Blossfeld, E. Klijzing, M. Mills & K. Kurz (Eds.), *Globalization, Uncertainty and Youth in Society* (pp. 47-79). New York/Oxford: Routledge.
Lenhardt, U., & Priester, K. (2005). Flexibilisierung – Intensivierung – Entgrenzung: Wandel der Arbeitsbedingungen und Gesundheit. *WSI Mitteilungen, 58*, 491-497.
Leopold, T., Geißler, F., & Pink, S. (2011). *How Far Do Children Move? Spatial Distances After Leaving the parental Home*. SOEP papers No. 368, DIW Berlin.
Mack, J., & Lansley, S. (1985). *Poor Britain*. London.
Mayer, K.-U., Müller, W., & Pollak, R. (2007). Germany: Institutional change and inequalities of access in higher education. In Y. Shavit, R. Arum & A. Gamoran (Eds.), *Stratification in higher education. A comparative study* (pp. 240-265). Stanford: Stanford University Press.
Middendorff, E., Apolinarski, B., Poskowsky, J., Kandulla, M., & Netz, N. (2013). *Die wirtschaftliche und soziale Lage der Studierenden in Deutschland*. 20. Sozialerhebung des Deutschen Studentenwerks, durchgeführt durch das HIS-Institut für Hochschulforschung, Bonn.
Mood, C. (2010). Logistic regression: Why we cannot do what we think we can do and what we can do about it. *European Sociological Review, 26*, 67-82. http://dx.doi.org/10.1093/esr/jcp006
Motel, A., & Szydlik, M. (1999). Private Transfers zwischen den Generationen. *Zeitschrift für Soziologie, 28*, 3-22.
Nolan, B., & Whelan, C. T. (1996). *Resources, Deprivation and Poverty*. Oxford.
OECD (2011). *Divided We Stand: Why Inequality Keeps Rising*. OECD Publishing.
OECD (2008). *Growing Unequal? Income Distribution and Poverty in OECD Countries*. OECD Publishing.
Population Reference Bureau (2013). *Fertility Rates in Low Birth-Rate Countries, 1996-2011*. Washington: PRB (http://www.prb.org/Publications/Articles/2012/low-fertility-countries-tfr.aspx).
Projektgruppe SOEP (2012). Documentation PGEN. *Person-related status and generated variables* (v28), Berlin. Available online at: http://www.diw.de/documents/dokumentenarchiv/17/diw_01.c.410636.de/pgen-v28.pdf (2.12.2013).
Reinowski, E., & Steiner, Ch. (2006). Armut von jungen Erwachsenen in der Bundesrepublik. Vierteljahrshefte zur Wirtschaftsforschung, 75, 89-107. http://dx.doi.org/10.3790/vjh.75.1.89
Rinne, U., & Zimmermann, K. F. (2011). *Another Economic Miracle? The German Labor Market and the Great Recession*. IZA Discussion Paper No. 6250, Bonn.
Roloff, J. (2010). Informelle und materielle Hilfe-/Unterstützungsleistungen – Wer sind die Akteure? *Bevölkerungsforschung Aktuell 06*, 12-18.
Scarpetta, S., Sonnet, A., & Manfredi, T. (2010). Rising Youth Unemployment During The Crisis: How to Prevent Negative Long-term Consequences on a Generation? *OECD Social, Employment and Migration Working Papers, No. 106*, OECD Publishing.
Scherger, S. (2009). Social change and the timing of family transitions in West Germany. Evidence from cohort comparisons. *Time and Society, 18*, 106 – 129. http://dx.doi.org/10.1177/0961463X08099947
Schulenberg, J. E., & Schoon, I. (2012). The transition to adulthood across time and place. *Longitudinal and Life Course Studies*, *3*, 164-172.
Smeeding, T. M., & Phillips, K. R. (2002). Cross-National Differences in Employment and Economic Sufficiency. *Annals of the American Academy of Political and Social Science, 580*, 103-133. http://dx.doi.org/10.1177/000271620258000105
Szydlik, M., & Schupp, J. (2004). Wer erbt mehr? Erbschaften, Sozialstruktur und Alterssicherung. Kölner *Zeitschrift für Soziologie und Sozialpsychologie, 56*, 609-629. http://dx.doi.org/10.1007/s11577-004-0106-0
Townsend, P. (1979). *Poverty in the United Kingdom. A Survey of Household Resources and Standards of Living.* Harmondsworth.
Wagner, G. G., Frick, J. R., & Schupp, J. (2007). The German Socio-Economic Panel Study (SOEP) – Evolution, Scope and Enhancements. *Schmoller's Jahrbuch – Journal of Applied Social Science Studies, 127*, 139ff.
Williams, R. (2009). Using Heterogeneous Choice Models to Compare Logit and Probit Coefficients across Groups. *Sociological Methods & Research, 37*, 531-559. http://dx.doi.org/10.1177/0049124109335735

Endnotes

[1] Whether the recent years indicate a stop or even reversal of the increase of young adults living with their parents remains to be seen.
[2] However, only a small number of persons possess intermediate or upper general education but no vocational qualifications. Given the higher relevance of vocational qualifications over general schooling certificates for labour market outcomes and thus, poverty, we group individuals that only possess intermediate (upper) general schooling qualifications together with individuals possessing lower (intermediate) secondary school and vocational training.
[3] We do not distinguish between cohabitation and marriage. However, this distinction might be important if cohabiting relationships are perceived as more transient and less likely to involve the pooling of resources.
[4] The precarious labour market segment consists of a variety of jobs marked by low pay and/or insufficient protection and coverage by the social security system. Given that various job schemes have been introduced and abandoned, a detailed description would go beyond the scope of this paper.
[5] Even more extreme is to calculate individual poverty based on the individual earnings of the younger generation even when still living with their parents, see Smeeding and Phillips (2002).
[6] For a general analysis of inter-generational support see Motel and Szydlik (1999), Dallinger and Walter (1999), Roloff (2010); for inter-generational inheritance see Szydlik and Schupp (2004).
[7] Compared to the annual survey of living conditions of university students in Germany, the SOEP underestimates inter-generational transfers. The representative survey for students in Germany reveals that the monthly disposable income of a university student was around the minimum income provided by social assistance. Almost 90% of students receive economic support from their parents, amounting to around half of their incomes, on average. Students from higher social background have higher incomes than students from lower classes; however, these differences are rather small. In 2012, the mean income of students was 881€ overall, 891€ for students from higher social backgrounds and 850€ for students from lower social backgrounds. Whereas parental support amounts to 63% of the income for higher SES students, it makes up only 27% for lower SES students. The survey also offers detailed descriptions of the material living conditions (housing, income, employment, etc.) of university students in Germany. See Middendorff, Apolinarski, Poskowsky, Kandulla and Netz (2013): 192.
[8] We also estimated logistic regressions and found no substantial differences in findings. A full set of all linear and logit regression models can be found in the appendix. Various approaches have been proposed to allow comparison of coefficients from logit models across different samples (Allison, 1999; Williams, 2009) or after entering additional covariates (Breen, Karlson & Holm, 2013). However, since we are interested in comparing the coefficients across models with differently measured dependent variables, we follow Mood (2010) in applying LPM models.
[9] To allow proper comparisons, we ran a third set of regressions based on the uncorrected poverty measure, but restricted the analysis to the sample of young adults for whom parental information is available after leaving home. This sample is different from the full sample because we lose those young adults who left home and whose parents quit the sample (see above, section 2). A full table of results for all nine models is given in the appendix.
[10] With this modification we rule out the possibility that those young adults who are considered poor are not on an otherwise promising career path, but truly in a situation of low economic resources *and* low future prospects.

Longitudinal and Life Course Studies 2014 Volume 5 Issue 2 Pp 173 - 188 *ISSN 1757-9597*

The Great Recession and recent employment trends among secondary students in the United States

Jeremy Staff
The Pennsylvania State University
jus25@psu.edu
Monica Kirkpatrick Johnson
Washington State University
Megan E. Patrick, John E. Schulenberg
University of Michigan

(Received November 2013 Revised April 2014) http://dx.doi.org/10.14301/llcs.v5i2.275

Abstract

The Great Recession had substantial effects on the labor market in the United States, as elsewhere. To what extent did secondary students' employment decline during this time? Which students are leaving the labor market? Are reductions in employment concentrated in particular jobs? To answer these questions, we use data from the Monitoring the Future study, an ongoing study of secondary students in the United States. More specifically, we examine recent trends in teenage employment using 6 cohorts each of 8th, 10th, and 12th graders (from 2006 to 2011, spanning before, during and after the Great Recession). Results show a gradual decline in school year employment since 2006, including the years after the official end of the recession. Employment during the school year is especially low among 8th and 10th graders, Hispanic and non-Hispanic Black youth, and students from disadvantaged backgrounds (based upon parental education), though the recent drop in work has varied little by population subgroups. The decline in employment is, however, concentrated among the oldest students, and working intensely (over 20 hours per week) has dropped more than working moderate hours. Students are more likely to babysit and do lawn work, and less likely to hold jobs in office, clerical, and sales positions than in years past. These patterns and recent shifts in job type suggest some degree of job replacement by older workers.

Keywords: teenage employment, Great Recession

Introduction

Adolescent employment has been a subject of great interest in the past three decades (see reviews by Mortimer, 2010; Staff, Messersmith, & Schulenberg, 2009; Staff, Mont'Alvao, & Mortimer, forthcoming). Scholars, educators, and policy makers alike have been interested in which teenagers are working for pay, how much of their time is allocated to it, and whether employment, especially among secondary students who are working long hours during the school year, has important short- and long-term consequences for young people's school achievement and social development. As such, it is important to understand whether the Great Recession in the United States affected the employment opportunities and experiences of middle and high school students.

Officially spanning from December 2007 to June 2009 in the United States, the Great Recession was marked by a countrywide decline in economic

activity, increased rates of job loss and long-term unemployment, and reductions in individual wealth and household income, with far reaching effects (Garson, 2013; Grusky, Western, & Wimer, 2011; Peck, 2012). The national unemployment rate among those 16 years of age or older, for instance, doubled from 5% to 10%, peaking in October 2009 despite the recession's official end (U.S. Bureau of Labor Statistics, 2012). It has remained relatively high, dropping below 8% for the first time in September 2012. Unemployment rates are highest for the youngest workers (i.e., 16 to 19 year olds) and do not include youth who do not meet the official definition of unemployment but who may want to work if they could (U.S. Bureau of Labor Statistics, 2014).

Early employment experiences play an important role in the life course (Mortimer, 2003). By taking the long view of lives and how they are structured, scholars have shown how both the nature and amount of work change with age (Mortimer, 2003; Safron, Schulenberg, & Bachman, 2001; Perreira, Harris, & Lee, 2007; Steinberg & Cauffman, 1995), as well as how early work experiences portend later trajectories of attainment, problem behaviors, and well-being (Bachman, Staff, O'Malley, Schulenberg, & Freedman-Doan, 2011; Carr, Wright & Brody, 1996; Mortimer & Staff, 2004; Staff & Mortimer, 2007). The life course is fundamentally structured in time and space, and the place of employment among secondary students may be changing. Students today may be less likely to work than in previous cohorts due to broad shifts in labor supply (e.g., changing high school graduation requirements may have made it harder for teenagers to combine school and work, and decrease their preferences to do so; see Smith, 2011, for a review) or labor demand (employers may prefer adult workers who are increasingly competing for what once were considered "teenage" jobs). It is likely that rates of employment among American secondary students were affected by the Great Recession, though it is also the case that teenage employment was on the decline before the recession hit (Smith, 2011; Staff et al., forthcoming). Thus, longer-term changes in the labor market, in education, and other factors are likely also involved.

The decision to enter the workforce is influenced by the young person's orientations and goals, so perhaps youth nowadays have less desire to work due to the increasing emphasis placed on attending and completing college (Goyette, 2008; Johnson & Reynolds, 2013; Reynolds, Stewart, Sischo, & McDonald, 2006). Furthermore, wanting and finding a job in the early life course, just as in older ages, is influenced by socio-demographic background. These characteristics are also likely to affect employers' selection among job seekers. As such, it is important to assess how gender, race/ethnicity, and socio-economic background may shape overall trends in teenage employment while attending secondary school.

In this article, we use data from the ongoing Monitoring the Future (MTF) study to examine recent trends in employment among middle and high school students in the United States, charting change during the Great Recession and its aftermath. This ongoing project continues to collect data on large (approximately 17,000 students per grade), nationally representative samples of 8th, 10th, and 12th graders each year (Johnston, O'Malley, Bachman, & Schulenberg 2013). Our use of the MTF allows us to examine whether rates of employment are changing in similar ways by gender, race/ethnicity, and socio-economic background. In addition, we look at changes in educational goals and the types of work most in decline for insight into why employment among secondary students is diminishing, especially during the Great Recession.

Teenage work in the United States

Teenagers in the United States have a long history of working for pay, though for much of this history the teenagers who were working were no longer attending school (Greenberger & Steinberg, 1986; Mortimer, 2003; Warren & Cataldi, 2006). For example, among 16-17 year old males in 1940, 78% of those working were not attending school; by 1990 over 90% of workers in this group were also in school (Warren & Cataldi, 2006). In both periods about half to two-thirds of 16-17 year old males were non-employed students, but over time it became increasingly common for teenagers who did work to be in school simultaneously. Studies in the 1980s and 1990s indicated that nearly all U.S. adolescents enrolled in school were employed at some point during the school year (U.S. Department of Labor, 2000; Entwisle, Alexander, & Olson, 2000) and work is

now seen as a key developmental context of adolescence (Crosnoe & Johnson, 2011). The transition "from school to work" is also recognized as involving an extensive period in which these roles actually overlap and may include movement back and forth between employment and returning to school (Staff & Mortimer, 2007; Light, 2001). Given our study concerns those still in middle and high school, we focus on those who combine part-time work with full-time school.

Scholars continue to debate and study whether holding a job during the school year is beneficial or detrimental to the personal development and long-term attainment of secondary students in the United States. As our study is not intended to address the short- and longer-term consequences of employment, we only briefly characterize this debate. From one perspective, employment may teach valuable skills applicable to working in adult life, as well as provide practice with money and time management, such that early work experience facilitates higher educational attainment and later income (e.g. Mortimer, 2003). From another perspective, employment detracts from schooling and facilitates substance use and other risky behaviors, especially when young workers spend long hours on the job (e.g., Bachman & Schulenberg 1993; Monahan, Lee, & Steinberg, 2011; Steinberg & Dornbusch, 1991). Differences among adolescents prior to their employment may also explain what might appear as "consequences" of employment (Staff, Schulenberg, & Bachman, 2010; Staff, Osgood, Schulenberg, Bachman, & Messersmith, 2010). Importantly, research in this area has identified work intensity, or the number of hours per week that adolescents work, as a critical factor in whether employment is associated with beneficial or detrimental outcomes. As such, trends in the prevalence of intensive work, most often defined as working 20 or more hours per week during the school year, are important to track.

It is also important to identify the particular groups for which participation in employment is declining, as both the exposure and the risks and benefits of employment have not been shared equally among adolescents. Past research indicates that by the 1980s, gender no longer differentiated rates of employment in adolescence (Schoenhals, Tienda, & Schneider, 1998; Warren & Cataldi, 2006; Perreira et al., 2007), though research has not yet assessed whether gender differences in teenage employment have emerged in the wake of the Great Recession. Adolescents from lower socio-economic status families, or who are members of disadvantaged racial/ethnic groups, have had lower rates of employment, however, possibly due to reduced opportunity in local labor markets and other structural factors (D'Amico, 1984; Bachman & Schulenberg, 1993; Steinberg & Cauffman, 1995; Schoenhals et al., 1998; Warren & Cataldi, 2006). Students from disadvantaged backgrounds may have been hit hardest by the Great Recession.

With respect to the risks and benefits of employment, these may depend on teens' reasons for working, the types of jobs and quality of work they are involved in, how they use their earnings, their developmental histories, and the broader social context (Apel et al., 2007; Entwisle, Alexander, & Olson, 2005; Johnson, 2004; Lee & Staff, 2007; Leventhal, Graber, & Brooks-Gunn, 2001; Marsh, 1991; Marsh & Kleitman, 2005; Newman, 1996). Substance use risks associated with spending long hours on the job, for example, are limited to non-Hispanic White adolescents (Johnson, 2004; Bachman, Staff, O'Malley, & Freedman-Doan, 2013). In fact, research shows that at-risk youth seem to benefit the most from heavier investments in work during adolescence (Apel et al., 2007; Staff & Mortimer, 2007). It is possible that the groups that secure the most benefit and face the least risk from employment may be those whose participation is in the greatest decline.

Why might teenage employment rates fall?

Given the dramatic increase in the unemployment rate in the United States overall, it would not be surprising if teenagers' participation in work was reduced during the Great Recession. In a recent working paper, Smith (2011) reports substantial declines in employment among 16-17 year olds during the Recession, but also that employment among this age group has been trending downward since the 1980s. Reductions have occurred in employment for 16-17 year olds during each major recession since the 1980s without fully rebounding during recovery periods, and unemployment soared between 2007 and 2010 (Smith 2011). Whether

these declines characterize the experience of teens at other ages is not known. Younger adolescents are often involved in more informal paid work (e.g., yardwork, babysitting) and work fewer hours, so that the recent economic downfall may have had less impact on younger teenagers.

Several hypotheses have been offered to explain the declines in work participation among teenagers (see review by Smith, 2011). Recent decades have seen the adult labor market increasingly divided between the "haves" and "have nots." While the earnings of those with college or graduate degrees have been steady or increasing, the earnings of those with less education—the vast majority of workers—have eroded (Lemieux, 2006). The manufacturing sector has continued to decline, pushing more and more workers into the service sector (Morris & Western, 1999). It may be that teenagers who seek employment during the school year are experiencing greater competition for jobs with older workers—both those in the normative employment years and also perhaps those who have delayed retirement. Rising immigration may be creating competition for jobs as well. The proportion of adults who are immigrants, rose in the 1990s and 2000s, and the proportion of both immigrant and native adults in "teenage" jobs has increased (Smith, 2011). As "middle" skill level jobs disappear, older workers who were or would have been in these jobs are being pushed into low skill and low paying jobs. Smith (2011) finds some support for the idea that adults are crowding teens out of the labor market, at least with respect to 16-17 year olds, suggesting that lower rates of youth employment are not entirely "voluntary."

Economic changes associated with the Great Recession may have exacerbated these trends toward lower participation in employment among secondary students. Massive job losses may have hit teenagers directly by downsizing or reduced hiring, but teens may also have been squeezed out even further as older displaced workers competed with them for the same jobs. Job losses in the U.S. economy were initially concentrated in specific job sectors including construction and manufacturing, but eventually touched nearly all sectors (Goodman & Mance, 2011).

Consistent with this crowding out argument and the evidence to date, we expect work participation to have declined, particularly in recession years. Working teenagers may also have had to cut back on hours, so we would expect the largest declines among high intensity workers. In addition, if adolescents are indeed being crowded out by adults, declines in employment may have occurred mostly among older teens, who are in more direct competition with adults for jobs. We also expect to see stronger trends in the formal sector than in informal teenage jobs such as babysitting and yard work.

Teenagers enrolled in secondary school may also be investing less in employment in order to focus on college admission, perhaps especially among those who do not plan to rely on their own work earnings to fund college tuition. Adolescents' educational expectations have risen substantially over the past several decades, especially among those from lower social classes (Goyette, 2008; Reynolds et al., 2006; Schneider & Stevenson, 1999). College has been viewed by parents and adolescents alike as more necessary, as the wage premium of college degree attainment has risen. In response, college enrollment has risen (Snyder, Tan & Hoffman, 2006). As those teenagers who would have entered full-time work earlier in the past now set their sights on a college degree, investments in work may have changed. For those not anticipating higher education, it may have been strategic to invest in human and social capital accumulation though employment during high school (Staff & Mortimer, 2007). As that group has become smaller, the prevalence of employment overall may have declined. College-bound youth may have shifted their time investments, spending their time instead in music lessons, sports, volunteer service, and academic pursuits that they anticipate will help with admission to their desired institutions of higher education. Non-working youth, particularly girls, do spend a little more time on these kinds of educational activities than employed youth (Smith, 2011).

Again, these trends may have been exacerbated by the Great Recession. The salience of university degrees may have grown, as a strategy for bolstering one's continued employability across the life course in more uncertain times. Consistent with this argument, focusing on the supply of teenage workers, we again expect employment rates to have fallen during recession years, especially among high intensity workers. In addition, this perspective leads

to the expectation that adolescents planning to complete college degrees will have reduced their employment more than those expecting to enter the labor force without such credentials. If teenagers are manifesting a general disinclination to work, however, we would expect reduced employment to be evident across all ages of adolescence.

The current study is designed to assess current trends in employment, as well as the average number of hours worked, among middle and high school students in the United States. We investigate the following research questions:

1. What were the trends in school-year employment among secondary students across the period immediately before, during, and after the Great Recession?
2. Did these trends differ by key statuses including age, gender, socio-economic background (i.e. parent(s) education), and race/ethnicity?
3. Were employment trends linked to teens' educational goals?
4. Was change concentrated in certain types of jobs available to youth?

Methods

The Monitoring the Future study

Monitoring the Future (MTF) is an ongoing study of nationally-representative samples of middle and high school students in the US (Johnston et al., 2013). Each year, nationally representative samples of 8th, 10th, and 12th graders from approximately 135 public and private high schools and 155 middle schools across the US are selected using three-stage probability sampling procedures. Students completed paper questionnaires during school hours. Details regarding data collection are available elsewhere (Bachman, Johnston, O'Malley, & Schulenberg, 2011).

MTF is a school-based study. Although the samples are nationally representative of adolescents in these grade levels, they are not necessarily representative of adolescents more broadly, which would include high school dropouts. As US students are legally required to attend school until at least age 16 (about 10th grade), drop-out rates are typically calculated among 16-24 year olds. The dropout rate over the period between 2006 and 2011 remained under 10%, with a slight downward trend evident (National Center for Education Statistics, 2014). Employment rates may be higher among dropouts; because dropout is more common among older teens, employment rates for the 12th grade sample in particular may underestimate overall employment rates at corresponding ages.

The present analyses are based on data from 6 recent MTF cohorts (from 2006 to 2011) of 8th grade (modal age 14), 10th grade (modal age 16) and 12th grade respondents (modal age 18). Combining the multiple cohorts and grades, and excluding respondents who did not have valid data on self-reported employment, educational expectations, race/ethnicity, and parental education, reduced our sample size from 282,145 to 208,761 students. Approximately 4% of students had missing data regarding their school year employment, gender, and educational expectations. Just over 8% of students did not report their parents' educational attainment, and almost 17% were either missing data or reported a race/ethnicity other than Hispanic, Non-Hispanic Black, or Non-Hispanic White. With the exception of Table 2 (which was further limited to a random subset of employed youth who were asked questions regarding job type; n=74,484), all of the findings are based upon analyses of 208,761 students. Cases were weighted in all analyses to account for sampling design.

Measures

Each year, 8th, 10th, and 12th graders reported in the Spring, whether they were employed at any point during the school year, and if so, the average hours per week they worked (ranging on a 8-point scale from "0" to "more than 30 hours" per week). Among employed youth, we distinguished those who were employed "intensively" (i.e., 21 or more hours per week) from those who worked moderately (i.e., less than 21 hours per week). Employed 8th and 10th graders, as well as a random subset of employed 12th grade youth, were then asked to report from a listing of job categories, the job that "comes closest to the kind of work you have done for pay." The jobs were combined into five categories: (1) informal jobs (babysitting or lawn work); (2) restaurant jobs (including fast-food); (3) farm or agriculture; (4) office, clerical, or sales jobs; and (5) a residual category captured "other" and "odd" jobs. If students had multiple jobs, they were instructed to choose the one in which they worked the most hours.

Educational expectations indicated how likely respondents felt they were to graduate from a four-year college (coded on a four-point scale from "definitely won't" to "definitely will"). Given the steep increase in college ambitions in recent decades, we distinguished youth who "definitely will" graduate from college from the others (i.e., "Definitely won't"," probably won't", and "probably will").

We also considered whether trends in teenage employment varied by gender (coded 0=male; 1=female), as well as parental education (coded 0=high school degree or less, including those who attended college but did not graduate; 1=college degree or higher). The MTF data set also includes detailed measures of race/ethnicity. To assess variation in employment across the three largest racial/ethnic groups, we present results for respondents coded as: (1) Hispanic (Mexican American, Cuban American, Puerto Rican, or other Latin American); (2) Non-Hispanic Black; or (3) Non-Hispanic White. Of the 208,761 respondents who had valid data on all measures, approximately 52% were female; 16% of respondents were Hispanic, 13% were non-Hispanic Black, and 71% were non-Hispanic White; 33% were in 8th grade, 35% were in 10th grade, and 32% were in 12th grade; 55% of respondents' parent(s) had a college degree; and 64% of respondents expected that they would "definitely" graduate from college.

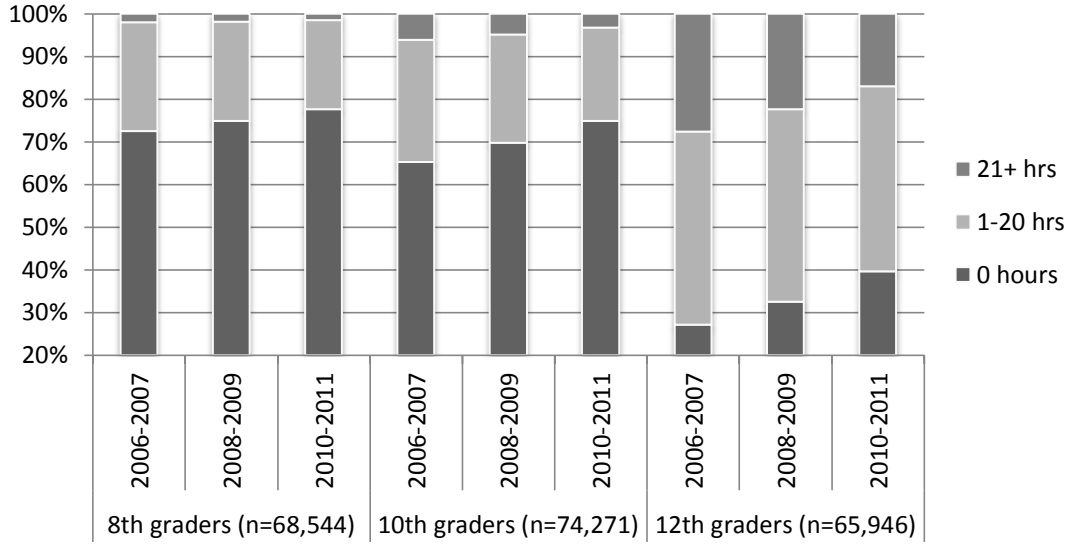
Results

The reduction in teenage employment during the Great Recession

Figure 1 shows the percentage of 8th, 10th, and 12th grade students who did not work during the school year, as well as those who worked moderately (i.e., averaged 1-20 hours per week) and more intensively (i.e., more than 20 hours per week) from 2006 to 2011. The cohorts are divided into three groups to assess employment rates in the years immediately before the Great Recession (i.e., 2006-2007 class cohorts), during the Great Recession (i.e., 2008-2009), and following the Great Recession (2010-2011). Figure 1 shows that employment rates declined during the Great Recession and its aftermath. For instance, in the years 2006 and 2007, 72% of 8th graders, 65% of 10th graders, and 27% of 12th graders did not work during the school year. In 2008 and 2009, 75% of 8th graders, 70% of 10th graders, and 33% of 12th graders did not work during the school year. The greatest changes occurred among 12th graders and the smallest among 8th graders. The percentage of non-working students continued to rise through the 2010-2011 period. Approximately 78% of 8th graders, 75% of 10th graders, and 40% of 12th graders in the 2010 and 2011 surveys were not currently employed and had not worked during the school year. The results suggest that teenagers have not returned to the workplace despite the recession's official end in 2009.

The loss of employment has been particularly high among 12th graders who work intensively. For instance, before the recession, 28% of 12th graders spent more than 21 hours per week working during the school year. By 2011, only 17% of 12th graders worked intensively. In contrast, the percentage of 12th graders who worked moderately remained virtually unchanged (i.e., 45% in 2006 and 2007; 45% in 2008 and 2009; and 43% in 2010 and 2011). Among 10th graders, the decline in employment from 2006/2007 to 2010/2011 was more evenly distributed among moderate and intensive workers (the percentage employed intensively declined from 6% to 3%; moderate work declined from approximately 29% to 22%).

Figure 1. Average hours per week spent working in a job during the school year from 2006 to 2011 by grade



Who is leaving?

Research has long shown that racial minorities and youth from disadvantaged backgrounds (i.e., their parent(s) have low educational attainment, earnings, and household income) are less likely to hold jobs in adolescence than white youth and those from advantaged backgrounds. Since some population subgroups are more vulnerable to economic downturns than others, we are particularly interested in whether the Great Recession, as well as other economic changes, has altered gaps between population groups in rates of teenage employment. In Figure 2, we first show trends from 2006 to 2011 in the percentage of girls and boys (combining 8th, 10th, and 12th graders) who reported working zero hours during the school year, as well as those employed moderately and intensively. In all years since 2006, boys are more likely to be working than girls. Despite the high job loss among adult men in the United States during the Great Recession, the percentage of boys employed during the school years has remained approximately 4 to 5% higher than girls. In unlisted analyses, we found that this gender disparity in employment was most evident during the 8th and 10th grades of high school. By 12th grade girls were slightly more likely to be employed than boys. Nevertheless, the gender disparity in teenage employment appears similar before, during, and after the Great Recession. Returning to Figure 2, we see little evidence that the overall decline in intensive and moderate employment varied by gender. From 2006 to 2011, girls and boys experienced similar drops in the number of hours worked during the school year.

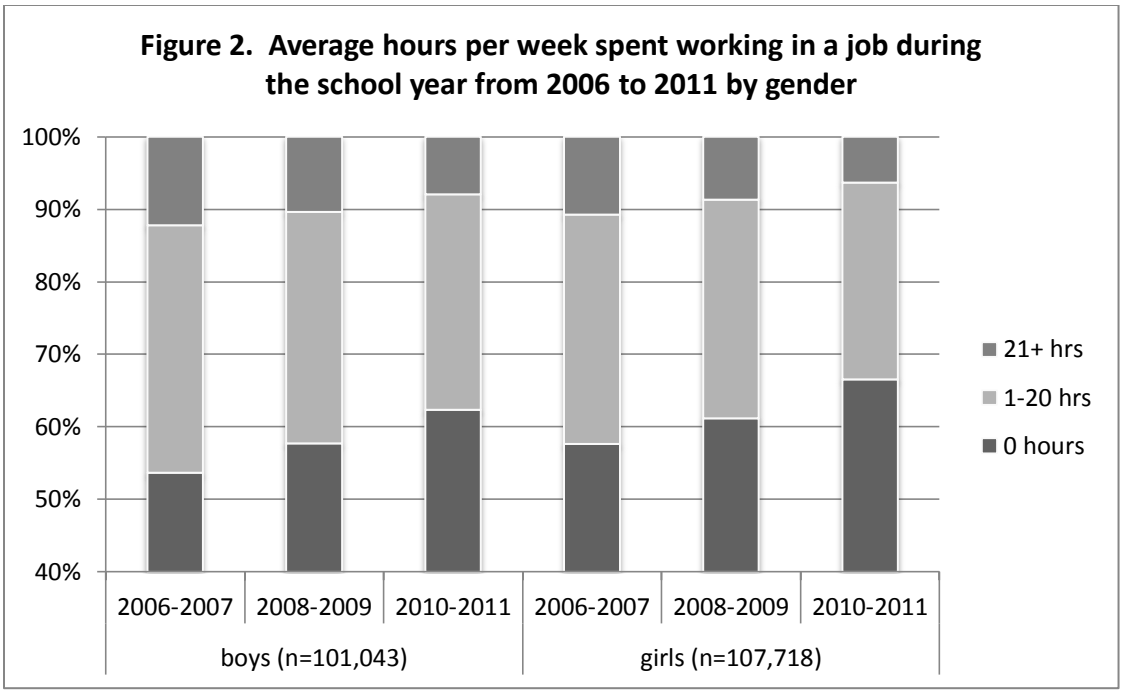
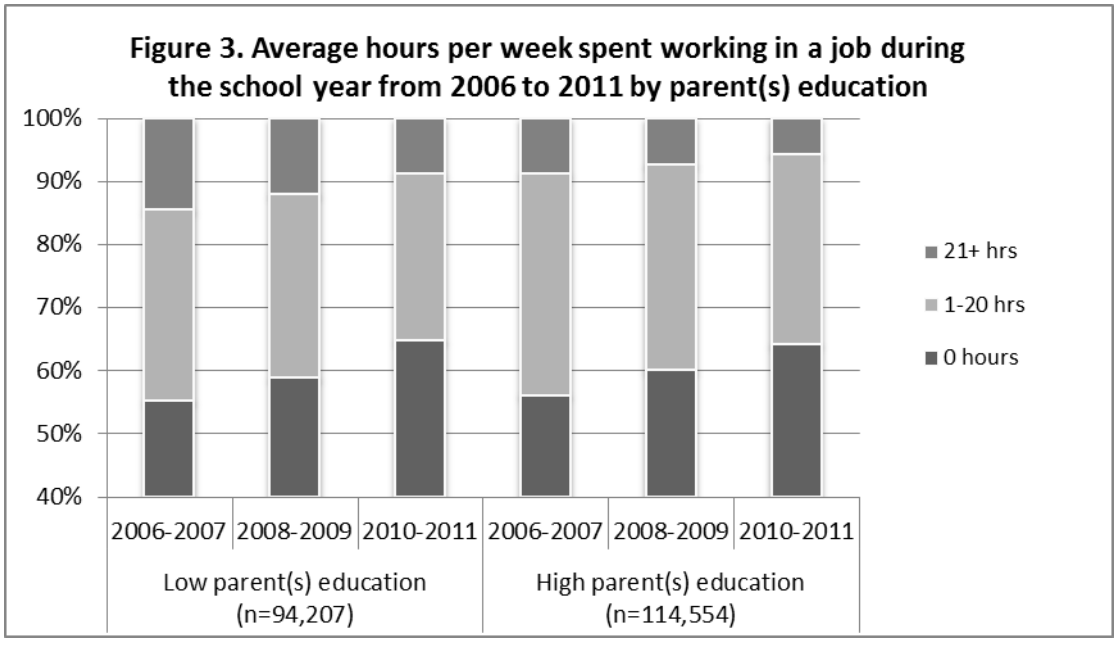
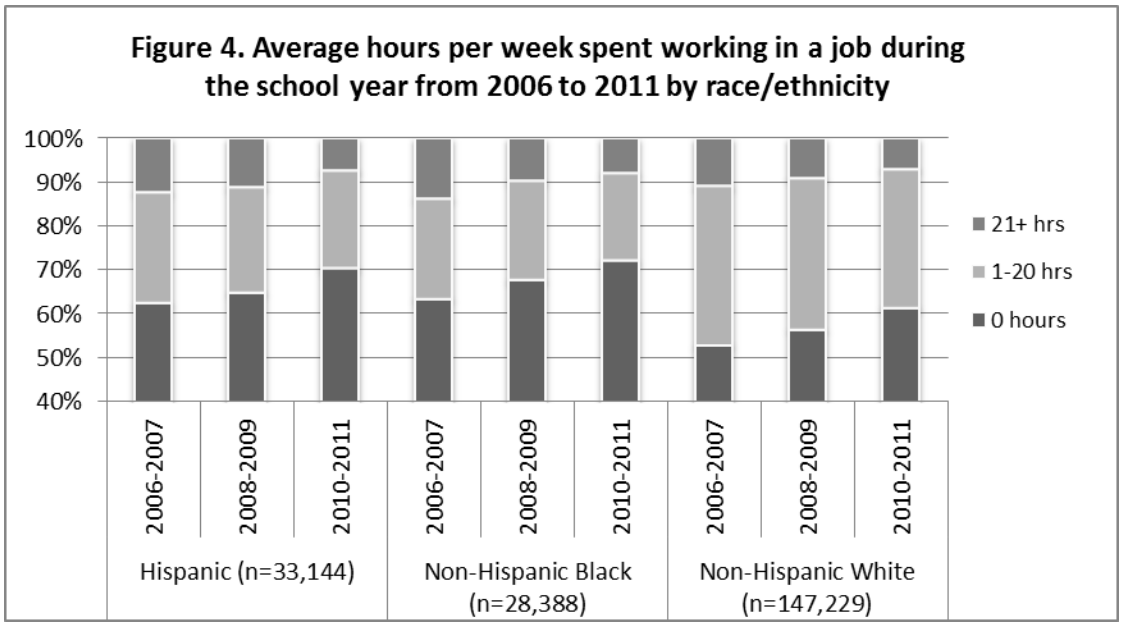


Figure 3 shows work hour trends during the school year from 2006 to 2011 separately for youth whose parents have some college education and those who do not. Before the Recession (2006-2007), as well as during the Recession (2008-2009), youth whose parent(s) had higher levels of education were only slightly more likely to be not working compared to youth from families with lower levels of education. In the years following the Great Recession (2010-2011), this slight difference in the percentage of non-working youth had essentially disappeared (64.8% compared to 64.3%). From 2006 to 2011, the percentage of youth employed intensively in families with lower education declined by 6%, compared to a 3% decline among youth in more advantaged families.

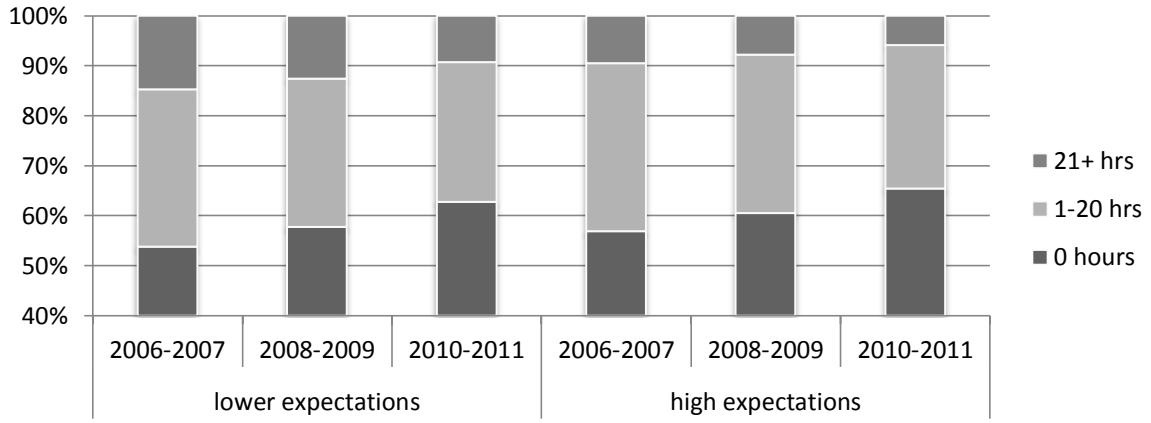




We conducted similar analyses in employment for Hispanic, non-Hispanic Black, and non-Hispanic White youth (these trends are shown in Figure 4). At all years, Black and Hispanic youth are much less likely to be in the labor force than Whites. By 2010-2011, for instance, 62% of White youth were not working during the school year, compared to 70% of Hispanics and 72% of Blacks. Though less likely to be employed, at all years the percentage of Blacks and Hispanics employed intensively is higher than the percentage of whites employed intensively.

As mentioned in the introduction, one possible reason for the decline in youth employment concerns greater desire to attend college and greater competition to gain entry and scholarships into top colleges. That is, the strong desire for college would translate into more time devoted to preparing for college and less to working. Thus, we compared work hours between those with and without an especially strong desire to graduate from a four-year college. As shown in Figure 5, although it was the case that those with a strong desire to graduate from a four-year college had higher non-working rates than those without, this difference was not greater in the years before, during, or following the Great Recession. However, the trends reveal a slightly steeper decline over time in intensive work among those who have more desire to graduate from college than among those with less desire. In 2006 and 2007, for instance, 15% of youth with lower expectations worked intensively, compared to 9% who had stronger college expectations. By 2010-2011, only 9% of youth with low expectations had worked intensively, whereas 6% of youth with high expectations worked more than 20 hours per week.

Figure 5. Average hours per week spent working in a job during the school year from 2006 to 2011 by educational expectations



Overall, the figures provide some evidence that the decline in employment appears to have been highest among intensive workers. To more fully address this possibility, we estimated a multinomial logistic regression model including all recent MTF cohorts from 2006 to 2011 (208,761 students) to assess the impact of grade level, gender, race/ethnicity, parent(s) education, and educational expectations on the odds of working 0 hours (i.e., not being employed during the school year), working 1-20 hours per week, or working more than 20 hours per week. Table 1 shows odds ratios and 95% confidence intervals for all comparisons of the outcome variable (sample size = 208, 761 respondents). As shown in the first column (which contrasts not working from moderate working), the odds of not working versus moderately working (i.e., 1-20 hours per week) are 19% higher for girls than boys, controlling for the other covariates. The odds of not working versus moderately working are 89% and 60% higher for Hispanic and Black youth, respectively, than for white youth. Results also show that compared to 12th graders, 10th and especially 8th graders are more likely to be not working during the school year. Youth whose parent(s) completed a post-secondary degree were slightly less likely to work during the school year, as were youth who definitely expected to graduate from college. Beyond these socio-demographic differences overall, the multivariate analyses document the recent decline in youth employment. For instance, the odds of not working, compared to working moderately, are 42% higher from 2010 to 2011 compared to just five years earlier.

Table 1. Odds ratios and 95% confidence intervals from a multinomial logistic regression model predicting work intensity during the school year for recent MTF class cohorts

	0 vs 1-20 hrs		21+ vs 1-20 hrs		21+ vs 0 hrs	
	OR	95% CI	OR	95% CI	OR	95% CI
Girl (vs. boy)	1.19	[1.16 , 1.22]	0.88	[0.85 , 0.92]	0.74	[0.71 , 0.77]
Race/ethnicity						
White	*referent*		*referent*		*referent*	
Black	1.89	[1.82 , 1.96]	1.73	[1.63 , 1.83]	0.92	[0.87 , 0.97]
Hispanic	1.60	[1.54 , 1.66]	1.41	[1.33 , 1.49]	0.88	[0.83 , 0.93]
Grade						
8th graders (ages 13-14)	4.42	[4.29 , 4.56]	0.15	[0.14 , 0.17]	0.03	[0.03 , 0.04]
10th graders (ages 15-16)	3.84	[3.74 , 3.95]	0.37	[0.36 , 0.39]	0.10	[0.09 , 0.10]
12th graders (ages 17-18)	*referent*		*referent*		*referent*	
Parent(s) highest education						
College degree or higher (vs. high school degree or less)	0.95	[0.93 , 0.98]	0.64	[0.61 , 0.67]	0.67	[0.64 , 0.70]
Educational expectations						
High expectations (vs lower)	0.96	[0.94 , 0.99]	0.69	[0.67 , 0.72]	0.72	[0.69 , 0.75]
Cohort						
2006-2007	*referent*		*referent*		*referent*	
2008-2009	1.16	[1.12 , 1.19]	0.83	[0.79 , 0.87]	0.72	[0.69 , 0.75]
2010-2011	1.42	[1.38 , 1.46]	0.65	[0.62 , 0.69]	0.46	[0.44 , 0.48]

Sample size=208,761

Pseudo R2=.11

In columns 2 and 3, which contrast intensive workers with those employed moderately or not at all, respectively, we see that recent cohorts of teenagers are significantly less likely to spend long hours working. Compared to 2006-2007, youth in 2010-2011 were 35% and 54% less likely to work intensively than moderate and non-workers, respectively. The results also suggest that employed Blacks and Hispanics were more likely than whites to average more than 20 hours per week on the job, though they were less likely than whites to be employed (either intensively or moderately). Furthermore, although youth who held high college expectations and whose parents had relatively high levels of education were less likely to be employed, they were more likely to limit their hours of work during the school year. Boys and youth in younger grades were less likely to be employed than girls and older youth, but when they did work they were more likely to spend long hours on the job.

To test whether the effects of these predictor variables have recently changed, in models (not shown here but available from the authors upon request) we estimated separate models for the cohorts before, during, and after the Great Recession, and then used z-tests to assess the equality of the estimates. We found little evidence that the associations between work hours and gender, parent(s) education, race/ethnicity, and educational expectations varied over the six year period. We did find that the association between grade level and employment has varied somewhat across cohorts, consistent with our discussion of Figure 1. Differences in school year employment by grade level have

converged in recent years, primarily due to the increase in 10th and 12th graders who are no longer working during the school year.

What jobs have seen change?

An additional explanation regarding why teenage employment has declined in recent years, as discussed earlier, is the increasing competition from adult workers. If this competition hypothesis were true, we would expect to see youth leaving jobs that offer more opportunities for skill development, and moving more into typical teenage jobs. We find some evidence in support of this conjecture. Table 2 shows changes in the types of jobs acquired by 8th, 10th, and 12th graders from 2006 to 2011. Compared to the 8th graders, rates of employment in informal jobs (i.e., babysitting, yard work, etc.) are lower by the 12th and 10th grades, but informal work has increased in prevalence for all grades. For instance, 70% of 8th graders, 57% of 10th graders, and 16% of 12th graders in 2010-2011 worked in an informal job, percentages that were one to nine points higher than in 2006-2007. Compared to the pre-recession period, secondary students in 2010-2011 were less likely to be employed as store clerks or salespersons or in office or clerical jobs (dropping from 29% to 24% for 12th graders and from 9% to 6% for 10th graders). Tenth graders are also less likely to be employed in restaurants (dropping from 15% to 9%).

Table 2. Types of jobs secondary students are holding from 2006 to 2011 by grade

	8th graders			10th graders			12th graders		
	2006-2007	2008-2009	2010-2011	2006-2007	2008-2009	2010-2011	2006-2007	2008-2009	2010-2011
Informal	69%	69%	70%	48%	51%	57%	13%	13%	16%
Restaurant	3%	4%	3%	15%	15%	9%	30%	33%	32%
Farm or agriculture	4%	5%	6%	5%	5%	5%	3%	3%	3%
Office, clerical, or sales	2%	2%	2%	9%	7%	6%	29%	27%	24%
Other	21%	20%	19%	24%	22%	23%	25%	24%	25%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%

Sample size = 74,484

Discussion

We set out to consider the extent to which US teenage employment changed during the Great Recession, and how these changes were moderated by socio-demographics, by student educational goals, and by type of job. What we found is that work during the school year is disappearing among 8th, 10th, and 12th grade students in the United States. Only 20 years ago, 3 out of 4 of the nation's high school seniors worked during the school year, as did approximately 40% of 8th and 10th graders (Staff et al., forthcoming). Today, the corresponding rates are 60% and 25%, respectively. The percentage of non-working secondary students clearly climbed during the Great Recession, just as it did for adults (Grusky et al., 2011). But what is especially notable is that teenagers today do not seem to be returning to the labor market, despite the official end of the economic recession in 2009.

Why are teenagers not returning to the labor market in these better economic times? As we reviewed in the introduction, Smith (2011) offered several reasons why teenagers could be leaving work. One reason is that youth, often the last hired and the first fired, are increasingly being squeezed out of the labor market due to increased competition from adults, who typically have more experience and are viewed as more dependable and trustworthy by employers. The concentration of employment declines at older ages in adolescence, and of working longer hours, are consistent with this crowding-out explanation. Our analysis indicates the loss of employment was most concentrated among 12th graders working more than 20 hours per week. In our analyses, we also found that teenagers in recent years are less likely to be in the semi-skilled jobs that would be more attractive to adults, such as working in sales, as a clerk, or in an office, and are more likely to be in the more informal type jobs (such as babysitting or

mowing lawns), typically filled by adolescents. Although these changes may suggest that adolescents are drifting more toward typical "teen-jobs" and away from typical "adult-jobs," it may also be true that store clerk jobs are less common, given the decline in brick-and-mortar stores, the increase in self-service check-out, and the overall drop in retail trade during the Great Recession (U.S. Bureau of Labor Statistics, 2012).

We find less support for the notion that youth are leaving the labor market due to supply-side factors. For instance, the well-documented increase in college ambitions does not appear to be driving youth away from paid work. As we show here, youth with especially high educational expectations are not leaving work at appreciably higher rates than youth with lower expectations. In fact, the reduction in working intensively is steeper among those with lower educational expectations. Moreover, we see only small differences in recent employment trends among youth who have highly educated parents (who are the most likely to attend and graduate from college) and those who do not. These trends suggest that rising ambitions and educational policies designed to improve learning and keep youth in school are not necessarily driving the decline in youth work.

These employment trends will be considered problematic or offering relief to scholars and policy makers, depending on their position in the ongoing debates about the consequences of employment. Our analyses do not contribute to this debate directly, however they do provide important context. Intensive employment of working 20 or more hours per week, which tends to be the most controversial, is declining more than moderate employment. In addition, gaps in employment and work intensity, along with important status characteristics including gender, race/ethnicity and socio-economic background, have not changed with the overall pull-back from employment. These gaps have not narrowed, but neither have they been exacerbated.

An important question is what else young people are doing with their time, as working rates are declining. Are these alternatives for time-use any more or less beneficial in terms of developmental, health, and educational outcomes? To the extent that youth are interning or volunteering, providing community service, or getting more involved in extra-curricular and academic activities, this would suggest less reason for worry. In contrast, to the extent that youth are spending more time in unproductive activities and settings, yielding little benefit in terms of human capital development, then the decline in work becomes more worrisome. It is even more problematic if youth are using their increased discretionary time to engage in unsupervised leisure activities that engender trouble-making and deviance. Thus it would be desirable for future research to address trends in time use among teenagers.

In addition, cross-national comparative research is needed. In this research, we focused on school year employment trends in the United States among 8th, 10th, and 12th grade students. Worldwide there has been a decline in adolescent and child labor, and future research should assess the factors driving these changes in other countries, especially in developing economies (Staff et al., forthcoming). Future research should use longitudinal data and more sophisticated methodologies to control for the many plausible supply and demand side factors, as well as pre-existing and unobserved influences, driving these trends in teenage employment. For instance, what influence do statewide changes in graduation requirements and legislation aimed at child labor have on youth employment? How have recent changes in parental employment impacted the labor market participation of their children? These are important questions for future research. Research should also chart changes in the quality of youth employment. Here we showed recent shifts in job type among teenagers, but research has not assessed whether learning and vocational development opportunities have also diminished in recent years. Perhaps many youth are not working because the jobs available to them have little career relevance and lack potential for skill development.

In summary, it is clear that youth employment in the United States declined during the years of the Great Recession and its aftermath. For many teenagers, these early employment experiences can have a powerful influence in the life course. Understanding the long-term developmental, educational, vocational, and social implications of this broad departure from youth work will be a focus of our future research endeavors.

Acknowledgements

This article was prepared for the Special Section on "Youth, Economic Hardship, and the Worldwide Great Recession" in *Longitudinal and Life Course Studies*. Prior versions of this manuscript were presented at the 2011 meeting of the Society for Longitudinal and Life Course Studies and the 2012 meeting of the Society for Research on Adolescence. Funding for this research was provided by a Mentored Research Scientist Development Award in Population Research from the National Institute of Child Health and Human Development (HD054467) to the first author. Results presented in this article are based upon analyses of data from the Monitoring the Future study, which is supported by a grant from the National Institute on Drug Abuse (R01-DA01411).

References

Apel, R., Bushway, S., Brame, R., Haviland, A., Nagin, D., & Paternoster, R. (2007). Unpacking the relationship between adolescent employment and antisocial behavior: A matched samples comparison. *Criminology, 45,* 67–97. http://dx.doi.org/10.1111/j.1745-9125.2007.00072.x

Bachman, J. G., Johnston, L. D., O'Malley, P. M. & Schulenberg, J. E. (2011). *The Monitoring the Future project after thirty-seven years: Design and procedures* (Monitoring the Future Occasional Paper No. 76). Ann Arbor, MI: Institute for Social Research.

Bachman, J. G., Staff, J., O'Malley, P, & Freedman-Doan, P. (2013). Race-ethnicity and socioeconomic status moderate how student paid work intensity is related to scholastic performance and substance use. *Developmental Psychology* 49:2125-2134. http://dx.doi.org/10.1037/a0031464

Bachman, J. G., Staff, J., O'Malley, P., Schulenberg, J. E., & Freedman-Doan, P. (2011). Twelfth-grade student work intensity linked to later educational attainment and substance use: New longitudinal evidence. *Developmental Psychology, 47,* 344-363. http://dx.doi.org/10.1037/a0021027

Bachman, J. G., & Schulenberg, J. E. (1993). How part-time work intensity relates to drug use, problem behavior, time use, and satisfaction among high school seniors: Are these consequences or merely correlates? *Developmental Psychology*, *29*, 220–235. http://dx.doi.org/10.1037/0012-1649.29.2.220

Carr, R., Wright, J., & Brody, C. (1996). Effects of high school work experience a decade later: Evidence from the National Longitudinal Study. *Sociology of Education, 69*, 66–81. http://dx.doi.org/10.2307/2112724

Crosnoe, R., & Johnson, M. K. (2011). Research on adolescence in the 21st century. *Annual Review of Sociology, 37,* 439-460. http://dx.doi.org/10.1146/annurev-soc-081309-150008

D'Amico, R. (1984). Does employment during high school impair academic progress? *Sociology of Education*, *57*, 152–164. http://dx.doi.org/10.2307/2112599

Entwisle, D. R., Alexander, K. L., & Olson, L. S. (2000). Early work histories of urban youth. *American Sociological Review, 65,* 279–297. http://dx.doi.org/10.2307/2657441

Entwisle, D. R., Alexander, K. L., & Olson, L. S. (2005). Urban teenagers: Work and dropout. *Youth and Society*, *37*, 3–32. http://dx.doi.org/10.1177/0044118X04268313

Garson, B. (2013). *Down the up escalator: How the 99% live in the great recession*. New York: Doubleday.

Goodman, C.J., & Mance, S.M. (2011). Employment loss and the 2007-09 recession: An overview. *Monthly Labor Review, 134*, 3-12. Retrieved from http://www.bls.gov/opub/mlr/2011/04/art1full.pdf

Goyette, K. A. (2008). College for some to college for all: Social background, occupational expectations, and educational expectations over time. *Social Science Research, 37,* 461-484. http://dx.doi.org/10.1016/j.ssresearch.2008.02.002

Greenberger, E., & Steinberg, L. D. (1986). *When teenagers work: The psychological and social costs of teenage employment*. New York, NY: Basic Books.

Grusky, D. B., Western, B., and Wimer, C. (Eds.). (2011). *The great recession*. New York, NY: Russell Sage Foundation.

Johnson, M. K. (2004). Further evidence on adolescent employment and substance use: Differences by race and ethnicity. *Journal of Health and Social Behavior*, *45*, 187–197. http://dx.doi.org/10.1177/002214650404500205

Johnson, M. K., & Reynolds, J. (2013). Educational expectation trajectories and attainment in the transition to adulthood. *Social Science Research, 42*, 818-835. http://dx.doi.org/10.1016/j.ssresearch.2012.12.003

Johnston, L. D., O'Malley, P. M., Bachman, J. G., & Schulenberg, J. E. (2013). *Monitoring the Future national survey results on drug use, 1975–2012:* Volume I, *Secondary school students*. Bethesda, MD: National Institute on Drug Abuse.

Lee, J. C., & Staff, J. (2007). When work matters: The varying impact of adolescent work intensity on high school drop-out. *Sociology of Education*, *80*, 158–178. http://dx.doi.org/10.1177/003804070708000204
Lemieux, T. (2006). Postsecondary education and increased wage inequality. *American Economic Review, 96,* 195-199. http://dx.doi.org/10.1257/000282806777211667
Leventhal, T., Graber, J. A., & Brooks-Gunn, J. (2001). Adolescent transitions to young adulthood: Antecedents, correlates, and consequences of adolescent employment. *Journal of Research on Adolescence, 11,* 297-323. http://dx.doi.org/10.1111/1532-7795.00014
Light, A. (2001). In-school work experience and the returns to schooling. *Journal of Labor Economics*, *19*, 65–93. http://dx.doi.org/10.1086/209980
Marsh, H. W. (1991). Employment during high school: Character building or subversion of academic goals? *Sociology of Education*, *64*, 172–189. http://dx.doi.org/10.2307/2112850
Marsh, H. W., & Kleitman, S. (2005). Consequences of employment during high school: Character building, subversion of academic goals, or a threshold? *American Educational Research Journal*, *42*, 331–369. http://dx.doi.org/10.3102/00028312042002331
Monahan, K. C., Lee, J. M., & Steinberg, L. (2011). Revisiting the impact of part-time work on adolescent adjustment: Distinguishing between selection and socialization using propensity score matching. *Child development*, *82*(1), 96-112. http://dx.doi.org/10.1111/j.1467-8624.2010.01543.x
Morris, M., & Western, B. (1999). Inequality in earnings at the close of the twentieth century. *Annual Review of Sociology, 25,* 623-657. http://dx.doi.org/10.1146/annurev.soc.25.1.623
Mortimer, J. T. (2003). *Working and growing up in America*. Cambridge, MA: Harvard University Press.
Mortimer, J. T. (2010). The benefits and risks of adolescent employment. *Prevention Researcher, 17,* 8-11.
Mortimer, J. T., & Staff, J. (2004). Early work as a source of developmental discontinuity during the transition to adulthood. *Development and Psychopathology, 16*, 1047–1070. http://dx.doi.org/10.1017/S0954579404040131
National Center for Education Statistics. (2014). *The Condition of Education 2013.* NCES 2013-037. US Department of Education. Retrieved from http://nces.ed.gov/programs/coe/pdf/coe_coj.pdf.
Newman, K. S. (1996). Working poor: Low-wage employment in the lives of Harlem youth. In J. A. Graber, J. Brooks-Gunn, & A. C. Petersen (Eds.), *Transitions through Adolescence: Interpersonal Domains and Context* (pp. 323-343). Mahwah, NJ: Lawrence Erlbaum.
Peck, D. (2012). *Pinched: How the great recession has narrowed our futures and what we can do about it*. Random House Digital, Inc.
Perreira, K. M., Harris, K. M., & Lee, D. (2007). Immigrant youth in the labor market. *Work and Occupations*, *34*, 5–34. http://dx.doi.org/10.1177/0730888406295394
Reynolds, J., Stewart, M., Sischo, L., & McDonald, R. (2006). Have adolescents become too ambitious? High school seniors' educational and occupational plans, 1976-2000. *Social Problems, 53,* 186-206. http://dx.doi.org/10.1525/sp.2006.53.2.186
Safron, D., Schulenberg, J. E., & Bachman, J. G. (2001). Part-time work and hurried adolescence: The links among work intensity, social activities, health behaviors, and substance use. *Journal of Health and Social Behavior*, *42*, 425–449. http://dx.doi.org/10.2307/3090188
Schneider, B., & Stevenson, D. (1999). *The ambitious generation: America's teenagers, motivated but directionless*. New Haven, CT: Yale University Press.
Schoenhals, M., Tienda, M., & Schneider, B. (1998). The educational and personal consequences of adolescent employment. *Social Forces*, *77*, 723–762. http://dx.doi.org/10.1093/sf/77.2.723
Smith, C. L. (2011). *Polarization, immigration, education: What's behind the dramatic decline in youth employment*? Working paper in the Finance and Economics Discussion Series, Divisions of Research and Statistics and Monetary Affairs, Federal Reserve Board, Washington, D.C.
Snyder, T. D., Tan, A. G., & Hoffman, C. M. (2006). *Digest of Education Statistics 2005,* (NCES 2006-030). Washington, DC: National Center for Education Statistics, U.S. Department of Education.
Staff, J., & Mortimer, J. T. (2007). Educational and work strategies from adolescence to early adulthood: Consequences for educational attainment. *Social Forces*, *85*, 1169–1194. http://dx.doi.org/10.1353/sof.2007.0057
Staff, J., Messersmith, E. E., & Schulenberg, J. E. (2009). Adolescents and the world of work. In R. Lerner & L. Steinberg (Eds.), *Handbook of Adolescent Psychology*, 3rd Edition (pp. 270-313). New York: John Wiley and Sons. http://dx.doi.org/10.1002/9780470479193.adlpsy002009
Staff, J., Osgood, D. W., Schulenberg, J. E., Bachman, J. G., & Messersmith, E. E. (2010). Explaining the relationship between employment and juvenile delinquency. *Criminology, 48*, 1101-1131. http://dx.doi.org/10.1111/j.1745-9125.2010.00213.x

Staff, J., Schulenberg, J. E., & Bachman, J. G. (2010). Adolescent work intensity, school performance, and academic engagement. *Sociology of Education, 83*, 183–200. http://dx.doi.org/10.1177/0038040710374585

Staff, J., Mont'Alvao, A., & Mortimer, J. T. (Forthcoming). Children at Work. In M. Bornstein & T. Leventhal (Eds.), *Handbook of Child Psychology and Developmental Science, Volume 4: Ecological Settings and Processes in Developmental Systems.*

Steinberg, L., & Cauffman, E. (1995). The impact of employment on adolescent development. *Annals of Child Development*, *11*, 131–166.

Steinberg, L., & Dornbusch, S. M. (1991) Negative correlates of part-time employment during adolescence: Replication and elaboration. *Developmental Psychology*, *27*, 304–313. http://dx.doi.org/10.1037/0012-1649.27.2.304

Steinberg, L. D., Fegley, S., & Dornbusch, S. M. (1993). Negative impact of part-time work on adolescent adjustment: Evidence from a longitudinal study. *Developmental Psychology*, *29*, 171–180. http://dx.doi.org/10.1037/0012-1649.29.2.171

U.S. Department of Labor. (2000). *Report on the youth labor force*. Washington, DC: U.S. Government Printing Office.

U.S. Bureau of Labor Statistics. (2012). *The Recession of 2007-2009.* Retrieved from http://www.bls.gov/spotlight/2012/recession/pdf/recession_bls_spotlight.pdf

U.S. Bureau of Labor Statistics. (2014). *The Employment situation—March 2014*. Retrieved from http://www.bls.gov/news.release/pdf/empsit.pdf

Warren, J. R., & Cataldi, E. F. (2006). A historical perspective on high school students' paid employment and its association with high school dropout. *Sociological Forum*, *21*, 113–143. http://dx.doi.org/10.1007/s11206-006-9005-7

Longitudinal and Life Course Studies 2014 Volume 5 Issue 2 Pp 189 - 198 *ISSN 1757-9597*

Did the Great Recession affect young people's aspirations and reinforce social inequality?

Walter R. Heinz, BIGSSS, University of Bremen, Germany
walter.r.heinz@web.de

(Received March 2014 Revised April 2014) http://dx.doi.org/10.14301/llcs.v5i2.288

In the first decade of the 21st century, youth transition research in Europe (Buchmann & Kriesi, 2011) and in North America (Crosnoe & Johnson, 2011) made a great leap forward. This progress is largely attributable to continuing panel studies and advances in data analysis, but also to the pressing need to understand the dramatic changes in labour markets and the rising costs of education in the UK and USA, that impact families and their offspring's transition to adulthood. In the fall of 2013, 7.8% of 15-24 year olds were unemployed in Germany, 15% in the USA (16-24), and 20% in Great Britain. The situation was much worse in Portugal with 36.5%, and in Spain with 57% of young people unemployed.

The papers in this Special Section study the effects of the Great Recession on youth transitions in three countries, by analysing longitudinal data and asking the following questions:

What are the effects of changing labour markets on employment opportunities of young people?

Did youth, who were confronted with economic hardship in their families and more demanding educational pathways as well as employment risks, lower their aspirations and adjust their educational and job expectations?

Does social class background become more consequential for growing up in poverty and for poverty risks in young adulthood?

To what extent are contemporary adolescents' and young adults' ambitions affected by their parents' employment history and their changing economic conditions; do they rewrite their life scripts and alter their plans for the future?

Do changing economic circumstances intervene in young people's identity development when they lack resources for investing in their futures?

While the focus here is on individuals and families, to fully understand the effects of the Great Recession on youth transitions one must consider social policy arrangements at the macro-societal level - the manner in which societies respond to the economic hardships of their citizens. Systematic comparative analysis, focusing on institutions and social pathways, is sorely needed.

Due to economic globalization and the financial crisis, a climate of uncertainty in regard to future life paths has been spreading (Blossfeld, Klijzing, Mills, and Kurz, 2005; Heinz, 2009) in the last decade. In their review of youth studies, Buchmann and Kriesi (2011, 491) drew a sober conclusion: "Anxiety about the future, low life satisfaction, and uncertain employment prospects have been shown to lead to postponement or forgoing of child bearing plans and to affect educational decisions."

Young people who have to navigate their multiple transitions to adulthood are confronted with rising skill demands in highly competitive education and employment markets. This is a competition in which youth from disadvantaged families have few chances to succeed, or even participate, without parents who stress high educational aspirations and promote self-confidence, as the papers in this issue show. However, in addition to good parenting, families at risk need material and social resources for preparing their children to become self-reliant agents of their multiple transitions, by directing and accompanying them towards promising pathways.

It is an often repeated insight, a truism by now, that structured opportunities and constraints, as well as individual motivation and competence, determine the outcomes of transitions. Moreover, micro-social factors, actors' social and psychological characteristics and their family backgrounds, play a crucial role in transitions, as individuals encounter the institutions and the social policy regimes that structure education and labour markets and define the responsibility of families.

It is quite a challenge to study transitions as a process in a theoretical framework that takes into account more than one dimension of the life course and the interaction of social structure, markets, institutions and individual actors across time. For example, the timing of leaving home varies by country and by gender and has become a reversible status passage with diverse destinations – studying, looking for work, employment and unemployment episodes, cohabiting, and forming a family. And, youth unemployment rates vary by country and within countries as well as by the vocational and academic pathways of graduates. For explaining such differences, educational pathways, family resources, labour markets, and public policy on the one hand, and young people's abilities, aspirations and orientations on the other hand, must be related to each other, as direct and indirect determinants of transition outcomes.

The complexity of analysing transitions across the life course was aptly characterized recently by Crosnoe and Johnson (2011, 440) when they called: "lives as a tapestry of three threads – developmental trajectories, social pathways, and social convoys – situated in settings of daily life, larger structures of society, and the broader sweep of history."

Youth research in a life course framework examines how life conceptions and future plans are transmitted by parents and how they affect the transition to adulthood. The contextual approach adds to the analysis the impacts of the structure of social inequality, family resources, and the accessibility of social pathways on the outcome of transitions.

In all three countries, educational expectations are rising: staying-on in the UK; entering the post-secondary tracks after high school in the USA, including enrollment in community colleges and four year colleges; and in Germany, university entrance, "dual studies," or vocational education and training (VET). But, aspirations tend to be higher than actual attainment; many young adults are dropping out because of financial pressures and return to college in evening classes. Since school and training pathways and transfer options vary by the respective educational cultures and labour market regulations that interact with institutional arrangements, young people are confronted with different transition regimes.

Given diverse institutional arrangements and changing opportunity structures, it is becoming essential that parents provide material and emotional support beyond adolescence and attempt to assist their children in negotiating the process of growing up, together with the influence of siblings, friends, and peer groups. There are no solo transitions; instead they are embedded in social convoys, overlapping relationships, and sometimes competing attachments.

Parental education and employment histories are reflected in their world views and socialization practices and shape their responses to changing economic circumstances and sudden income loss due to unemployment. As shown in many years of socialization research and more recently by Lareau (2004) for example, it is mainly middle-class parents who provide activity spaces and opportunities that promote their offspring's cognitive and social competencies which are useful for navigating pathways and dealing with institutions. It is likely that this parenting style transmits a social-class based portfolio of ambitions and self-efficacy that creates long-term advantages for the life course.

The four papers cover a lot of ground concerning the transition of young people in a period of economic uncertainty and rising unemployment. Key overarching questions connect the papers: how do the consequences of unemployment and poverty extend, via family life, to the next generation? To what extent do ambitions and achievement orientations mediate the impact of economic hardship and disadvantage on the future planning of young people?

The inter-generational transmission of individual orientations and structural locations, with a focus on poverty risks, is a central theme. These papers invite the reader to compare the impacts of the Great Recession on the socialization and life chances of youth in the UK, USA, and Germany, illuminated by sophisticated modelling of longitudinal data on transitions and outcomes.

First, let us look at the restructuring of opportunities in the school-employment nexus: in all three societies, changes in school-to-work pathways and post-secondary education occurred before the onset of the Great Recession; the 'vanishing youth labour market' and the expansion of higher education have greatly affected the timing and duration of transitions.

The nationally representative "Monitoring the Future Study" provides data that document how teenage employment has been declining in the USA since 2006 and during the period of the Great Recession. Staff, Johnson, Patrick and Schulenberg (this issue) show with six cohorts of 8th, 10th, and 12th graders that the reduction of part-time jobs (which used to be largely teenage-jobs) in the USA has reduced students' chances to gain work experience that contributes to their vocational development and to build connections with potential employers (for consideration of the meaning of work for growing up in America, see Mortimer, 2003). Self-reported employment experiences of youth in the age group between 13 and 18 documented that they tended to obtain more or less informal jobs in restaurants, farming, offices, or retail sales, instead of working in manufacturing and construction industries.

These changes in school-to-work pathways result from the rising learning demands in high school and rising ambitions to go to college on the one side, and changing employers' preferences for adult workers, who want to escape from unemployment, on the other.

Staff et al ask whether minority adolescents are more affected than whites and whether social class and gender matter? The decline of jobs especially hurts those adolescents who are weary of school and drop-outs, and thus young people at risk, because work experiences tend to stabilize their transition to adulthood, providing an alternative to hanging around in shopping malls and deviant behaviour.

This study suggests that young people did not withdraw from jobs voluntarily; instead, contemporary youth cannot find employment anymore that can easily be combined with school. The teens at the end of high school are competing with adults who are looking for work. US youth are not really leaving the job market, they are rather squeezed out by employers' changing preferences for temporary adult workers. Staff et al conclude that there is no decline of interest in work among high school students in the past 30 years; moreover, those who do find work are employed in informal instead of semi-skilled jobs. The desire to find some employment persists despite the trend toward higher education.

Thus, for a growing number of high school students in the United States, anticipating college overrides the preparation for employment. In contrast, German high level school ("Gymnasium") graduates are increasingly diversifying their pathways: most pursue the traditional university pathway, while others embark on vocational education and training (VET) or enter the new pathway of "dual studies" that combines the BA with an occupational certificate, a joint venture of employers and colleges. Staff et al (this issue, p. 176) conclude: "The salience of educational degrees may have also grown, as a strategy for bolstering one's continued employability across the life course in more uncertain times."

Did the Great Recession reinforce changes in the transition process that resulted from ongoing demographic transformation, labour market shifts to service jobs, and the trend toward post-secondary education? Teenage employment declined further during this period and fewer students had jobs after the official end of the Great Recession.

Surprisingly, parents' education did not matter in regard to the teenagers' employment rate, a finding that contradicts the assumption that adolescents look for work because of economic incentives. They rather regard this activity as a component of their transition. The lack of jobs, however, hurts the young people from disadvantaged families and neighbourhoods who need an occupational perspective, social skills and contacts from teenage work.

This is becoming a serious issue for life course policy reforms, which must focus on mentoring students and connecting schools with the local job market.

Turning to the German experience, the living circumstances for a growing number of young people have declined in recent years despite that country's successful coping with the consequences of the Great Recession. Economic growth, driven more by export than consumption, and a low unemployment rate could not narrow the gap between the well-to-do and the lower class that has been deepening in Germany since the beginning of this century. There is employment growth, however, with an expanding low-wage sector and temporary employment. As Groh-Samberg and Voges (this issue) document, based on the German Socio-Economic Panel Study (GSOEP), children and youth growing up in low income families and those receiving public assistance are highly vulnerable.

Focusing on the social class structure of Germany, they analysed the causes and consequences of youth poverty in a life course framework. SOEP household panel data are used to answer two questions: first, the extent to which parents support their children when leaving home; second, life course consequences of growing up in a poor family. There are different mechanisms of parental support, depending on the transition requirements and the families' capacities. Which ones are used?

This study is remarkable, as it offers a wide window of observation - the data cover the period from 1995 to 2011, the official end of the Great Recession, and it maps transitions in three main life course spheres, family formation, educational attainment, and labour market allocation.

Instead of regarding young people as self-supporting actors, the authors present a novel approach to estimating youth poverty. By taking into account the income of the family of origin, the rate of young people's poverty is reduced substantially. Thus, the determination of parents' support (transferred income) is based on the concept of independent, but financially linked households ("virtual family reunification").

Age groups are differentially affected: adolescents between ages 15 and 19, most of them still living at home, have the highest risk of poverty. Poverty risk is also high for young adults (age 26-30) who are struggling for an independent living arrangement in the labour and housing markets. An explanation is indicated, as the rates of leaving home differ by social class: youth from poor and rich families leave earlier, though for different reasons, than from middle class households.

There is a long-term trend of increasing social disparity in Germany, a spread of disadvantage in the risk zone of the working poor. The poverty rate increased during the Great Recession as recent figures (WZB "Social Report" 2013) document from 2007 (15. 2%) to 16.1% in 2011. The age groups between 18 and 24 and between 55 and 64 years are confronted with a higher risk of poverty, with 19% and 20.3%, respectively, than the middle age groups. There are vast regional differences; migrants and young people living in East German regions are more affected because of a depressed labour market.

Is youth poverty a prelude to a disadvantaged adulthood? Results suggest that the earlier stages of the life course have profound consequences later in life. As Groh-Samberg and Voges show, social background, measured by parental education, became more important as a source of poverty in young adulthood. This is an interesting result: The transition to an independent way of life seems to initially weaken the impact of social origin, but social class effects are returning when independence is reached. My guess is that the institutionalized transition pathways in Germany provide a temporary stability but then deliver their graduates into a stratified occupational market.

Since we do not know enough about the social mechanism of the inter-generational transmission of poverty, we must speculate whether there is a new culture of poverty (Valentine, 1968) or of worklessness (Shildrick, MacDonld, Furlong, Roden, and Crow2012) or even a new social class of the precariat (Standing, 2011) emerging, driven by the lack of secure employment and a decline of achievement orientations, when the number of neighbourhoods with families who raise their children in a context of economic hardship from generation to generation is increasing.

This issue is taken up at least in part by Schoon's paper (this issue). There were over one million workless households with dependent children in the UK in 2011. Does growing up in a jobless family extend its influence into volatile educational attainment and precarious employment, which result in becoming a client of the social security system? Previous research shows that sons of fathers who were jobless in their childhood were over twice as likely to have workless spells themselves. Therefore, it is important to find out how unemployed parents are communicating this situation to their children. Does their experience influence the way young people see their own futures, do they continue with high achievement orientations or do their financial restrictions block initiative and aspirations?

Schoon's analysis uses data from the Longitudinal Study of Young People in England (LSYPE), a large sample of more than 10,000 respondents. She illuminates the process by which young people carry the experience of parental job loss into the precarious pathway of NEET (Not in Education, Employment or Training), with special attention to gender differences. The study is set in the theoretical framework of a "developmental-contextual perspective" with a focus on the mediating role of educational aspirations and

expectations. Schoon asks, to what extent do ambitions remain alive in disadvantaged living circumstances and economic uncertainty and how do they moderate the effects of parental worklessness?

In view of the dramatic increase in the unemployment rate among 16-24 year olds to 20% in England, we must consider the reasons for being (stuck) in NEET and the ways to get out of this predicament. Does NEET become a temporary pathway in the transition to adulthood for school-leavers who live in a workless household?

Schoon also examines whether the child's agency (educational optimism and expectation to enter higher education) mediates and moderates the consequences of parental worklessness for their own employment in young adulthood. The assumption derived from status attainment literature is a strong one: optimism toward the future and educational aspirations are pro-active resources that may reduce the detrimental effects of parental social and economic hardship on the young person's transition.

However, when confounding factors are introduced, like the parent's education, living circumstances, household composition, and socio-geographic area (as measured by the Index of Multiple Deprivation), the effect of parental worklessness on NEET status diminishes. Furthermore, among young people with ethnic minority background, the accumulation of disadvantage and of risk factors can be moderated by high educational aspirations. This result may apply primarily to second-generation Asian immigrants, but ethnic background was not differentiated.

The study also analyses the duration of parental unemployment and of being NEET (between ages 16 and 20). Three family employment patterns are distinguished - parents who are continuously working; temporary jobless; and persistently jobless.

Between 2004 and 2006, i.e. before the onset of the Great Recession, 10% of the young people lived in a persistent jobless family, and 5% in a context determined by temporary worklessness; there were no gender differences. The young people were characterised by ethnic background, school performance at age 11, and achievement orientation.

As shown in models 1 and 2 (Tables 2 and 3), the association between parental worklessness and young people's achievement orientation can largely be explained by the families' socio-demographic characteristics. A closer look, however, suggests interaction effects, as young people's individual characteristics matter (model 4, Tables 2 and 3), too: young men and women from persistently and temporarily workless families do not benefit as much from high levels of prior educational achievement as do those from stable working families.

In regard to NEET, the association between family worklessness and NEET is largely due to the families' social and economic circumstances for boys and girls. Schoon's Model 4 (Tables 4 and 5) indicates that the risk of offspring NEET in a persistently workless family is reduced when the young person has a high level of achievement orientation, though the risk factors of single parenthood (for males only), rented accommodation, and area of multiple deprivation matter too.

Worklessness alone does not seem to explain why young people are trapped in NEET and its duration; instead, the level of parental education, lack of home ownership, large family size, single parenthood, and living in an area with multiple sources of deprivation are driving factors. The neighbourhood seems to have an important effect on becoming NEET, maybe because the peers share disappointing school experiences and potential employers read the area's reputation with a concentration of high risk youth as a negative signal. School attainment, the intention to stay-on, and ethnic minority status reduce the risk of being long-term NEET.

An encouraging result is that most of the adolescents in workless families want to stay on an educational pathway (75% boys, 91% girls); however, the proportion aiming for university drops to 42% for males and 58% for females, compared to 61% of boys and 72% of girls who live in a working family. A recent British study, based on the LSYPE (Micklewright & Anders, 2013) confirms this result: 20% of students who were good in school at age 11 did not apply to university by age 20. A strong social class effect was observed: only 66% of able children of less advantaged families, but 85% from the more advantaged homes applied.

Unfortunately, Schoon's analysis does not extend into the period effects of the Great Recession on the youth's achievement orientation.

Moving on to the USA, Mortimer, Zhang, Hussemann and Wu (this issue) analysed how children's achievement orientations are affected by economic hardship in their family in the period of the Great Recession, based on the longitudinal Youth Development Study (YDS). The YDS began in1988, when 14-15 year olds were contacted for the first time; they were followed through the transition to adulthood, and in 2008, their children too became part of the study. In this unique inter-generational study, 345 available parent-child pairs were reduced to a sample of pairs who completed surveys in 2009 and 2011, when the parents were 37 and 38 years old and their children 11 years and older.

The theoretical approach is a fine-grained social psychological model of status attainment, assuming that the sense of economic efficacy and educational and work-related plans are affected by changing economic circumstances. Following Elder's (1974) "Children of the Great Depression tradition, the authors ask how the economic hardship of the Great Recession" has impacted children's plans for the future.

The results are consistent with the UK study: achievement orientations of adolescents who are growing up in families with low education and unemployment experiences are more strongly affected by declining economic conditions, with boys more vulnerable than girls.

Mortimer et al focused on the children's sense of economic efficacy and educational aspirations and examined their association with household income in 2011. They also investigated the impacts of changing (declining) family economic resources between 2009 and 2011 on children's efficacy and aspirations. Are parent's unemployment history, their achievement orientations and educational attainment related to the way the children dealt with hardship?

Mortimer et al highlight, as a main result of their study, that the parents' efficacy when they were adolescents themselves is reflected in their children's economic efficacy. This inter-generational transmission of achievement orientation is also visible in the way changes in household income affected change in children's efficacy. Moreover, parents with at least a BA, stress education and guide their kids toward an academic pathway. They seem "to encourage their children in ways that spill over to their children's confidence in a manner that is protective, irrespective of the immediate economic situation of the family" (Mortimer et al, this issue, p.122).

Four potential moderators of the effects of family hardship were examined:

Parental work/employment career stability (52% were not jobless from 1997 to 2007; 24% were unemployed more than one month per year); the meaning of achievement in the family; children's gender (55% female), and age (mean age 15.8).

The potential effects of experiencing hardship are discussed at the family and the individual level. Adaptive response to economic woes may trigger new skills and forward looking ideas, and the family may have found strategies of coming to terms with less money that absorb the shock effects on the children. If families have prior experience of cutting back, then they are better prepared to meet the consequences of the Great Recession. Such prior experience is indicated by the parent's long-term employment history since 1997 (as measured by a monthly record of employment status). In contrast, there is also the likelihood that already disadvantaged families, as a result of problematic work histories, become more vulnerable as current financial problems increase if their belief in their own efficacy diminishes. At the individual level, a core assumption is that when parental biographies are characterised by strong achievement orientations in adolescence then it is likely that these attitudes are transmitted to their offspring, instilling confidence in the future.

The measure of economic efficacy is rather limited, consisting of three items concerning the future: getting a job that pays well, being able to own one's own home, and having a job one enjoys doing; educational aspirations are just measured by one item: What is the highest level of education that you plan to obtain in the future? Unfortunately, there is no item asking how realistic these aspirations were.

When the parents were 15 to 16 years old their educational aspirations and efficacy were measured and, in adulthood, their educational attainment recorded. More than 20 years later, parents' economic efficacy, as adolescents, had a positive effect on their children's sense of efficacy (Table 2). This suggests a continuity of achievement orientation in the family and respective socialization practices. Children became more efficacious when parental confidence was high and

incomes were rising (Figure 1). The more highly educated parents seem to succeed in protecting their children's sense of efficacy as financial problems increase (Figure 2).

Their parents' history of joblessness seems to have sensitized children to diminish their aspirations to the shifts in household income (Figure 3). Interestingly, the findings do not feature main or additive effects of recent economic hardships in the Great Recession on children's achievement orientations; instead, children's responses depended on parental achievement orientations, work histories, and attainments.

Discussion

These papers are embedded in a life course and social inequality framework: life chances are unequally distributed. It is hard for parents to break or divert this structured inter-generational relationship if they did not succeed in the education systems, live in a neighbourhood of multiple deprivations, work in non-standard jobs, and must come to terms with episodes of unemployment. Their efforts to instil educational and job aspirations and to promote their children's transitions that reach beyond the family's history of struggling with hardship, require a social policy that provides the resources for improving the family-school-labour market nexus.

As socialization research has shown over and over again, educational aspirations are class related and they are likely to change in response to transition outcomes. The subjective response to school and job experiences reflects young people's assessment of opportunities and results, which leads in most cases to increasing realism.

As the papers document, the Great Recession did not seem to have had a strong impact on youth transitions, however, social inequalities loom larger than at the end of the last century. The consequences of the Great Recession for youth transitions have been filtered by the respective social and political fabrics of the UK, USA, and Germany. Again, though this is a truism, it should forewarn us against premature causal assumptions about the impact of globalization and financial and economic crises, since policy interventions differed by the paths of social market economies and (neo) liberal market societies.

Twenty-five years ago, the effects of the declining economic status of young people in the USA on their pathways to education and work were analyzed in the report the "Forgotten Half" (William T. Grant Foundation, 1988). Ten years later, the forgotten half was revisited (Halperin, 1998) with an outlook for 2008. The results are discouraging: though more are starting post-secondary education, youth who do not succeed to start, or do not finish college, face living circumstances worse than ten years ago, and young men are more often affected than women. Youth who come from lower social backgrounds often lack the awareness and the means necessary for entering college. These early career decisions restrict employment opportunities. The effect of pursuing a higher education pathway on later earnings was greatest for students who were the least likely to go to university, as Brand and Xie (2010) showed.

For disadvantaged youth, access to the means of competence production (from kindergarten to lifelong learning), labour market opportunities and community life, depends more and more on formal and informal policies of inclusion. The family's vulnerability in times of economic uncertainty increases with the parent's lack of post-secondary education and unemployment episodes; these cumulative disadvantages exacerbate the negative effects of the Great Recession. Therefore, social policy must strengthen parents' agency by providing educational resources and job training and creating self-confidence in children by tutoring and mentoring practices.

When we ask the crucial question of how social inequality is reproduced in the transition to adulthood, several layers of contributing factors and processes must be taken into account: Family background, gender and living circumstances, but especially institutions, pathways and opportunity contexts, matter. For example, in labour markets with a low unemployment rate, the transmission of joblessness from father to son did not occur (Macmillan 2010).

Another dimension of social inequality is gender. As the papers suggest, young men are more affected by their families' economic hardship and especially their fathers' unemployment than young women. Where the male norms of becoming prepared for the breadwinner status still prevail, it is likely that boys take a loss of family resources more seriously than girls, who will not reduce their education and job aspirations. One explanation is that young women leave home earlier and that

young men may identify with the role of the male family provider, which is threatened by their fathers' (persistent) unemployment.

A more general comment concerns the challenge of explicating macro-micro links.

The papers in this Special Section apply advanced methods of longitudinal data analysis, but reflect the lack of theory, which is characteristic of life course and youth research. Research would gain validity with a framework that could explicate the linking mechanisms (Elder. 1995) of social structure and personality. A distinction between empirical models and conceptual models of causality should be made. The former test statistical relationships, the latter enable asking questions and interpreting results in a theoretical framework

In my view an important candidate for theoretical development is the concept of agency, which can help to delineate a crucial social and psychological mechanism that mediates the effects of individuals' contextual history on transition outcomes. The notion of agency has become a catch-all term, characterizing the person's engagement in constructing their biography. It refers to the capacity to mobilize resources for self-monitoring of decisions and their outcomes. This competence depends on the individual's contextual history (characterising biographical transitions and events), which is related to, but not determined by, social origin.

Depending on theoretical perspectives, agency is associated with dispositions, motives, abilities, creativity, habitus, imagination, competence, and the knowledge of cultural scripts, all of which are mobilized at transitions and tuning points (see Sewell, 1992).

The notion of agency has been used more like a treasure chest for importing the actor's subjectivity into life course analysis. It is time for putting agency into a tool-box for transition research by delineating its characteristics. What are the components of agency? In order to answer this crucial question, a heuristic micro-sociological approach integrating the developmental and social psychology of personality and identity construction is sketched.

I suggest drawing on the concept of personality factors in the context of quantitative life course study and on the concept of reflexivity for qualitative biographical studies.

Personality is well represented by the "big five", a descriptive cluster of interdependent factors: Open mind (imagination), Conscientiousness, Extraversion (socially engaged) Agreeableness (empathy), and Neuroticism, abbreviated OCEAN (see Fleeson, 2001; Roberts, Wood & Smith, 2005).

The role of selected personality dispositions like self-regulation, control beliefs, and self-esteem seem to vary by opportunity structure and cultural norms of individual responsibility for unemployment and social mobility. Diewald, Solga, Goedecke (2006) have illustrated these complex relationships during the restructuring of the life course after the fall of the Berlin Wall. Dispositions seem to be affected by dramatic life course events – turning points – rather than the other way around.

Especially for youth research, agency should be explicated by reference to the actor's reflexivity and capacity to mobilize a set of resources for the purpose of navigating transitions (see Sewell, 1992; Archer, 2012). Reflexivity is an important component of agency, presuming inter-relationships among identities, life scripts, opportunities, and institutions. Biographical reflexivity implies contextual sensitivity and a time-horizon: thinking back for getting ahead. Aspirations are reflections about the future: "Agency is exerted differentially depending on the actor's salient time horizon" (Hitlin & Elder, 2007, 171). In a temporal perspective, agency refers to three levels: Getting things done (present), remembering past decisions and outcomes (subjective causality: memory), and life projections (enacting a script).

To examine the contribution of the reflexive component of agency to decision-making about pathways and the biographical shaping of transitions, qualitative longitudinal case studies are the adequate procedure.

Another theoretical problem is to explain how "an endogenous developmental path" is unfolding when, for example, the risk zone of poverty diminishes with increasing age (Groh-Samberg (this issue) p. 163). The developmental path is based on agency, which means coming to terms with changing contexts and creating subjective continuity, an achievement that requires a self-reflexive mobilization of resources. For example, as the papers by Schoon and Mortimer et al suggest, parental unemployment hardship triggers young people's active responses that may reduce long-term life course consequences only when parents are well educated and promote high aspirations.

As Dannefer and Uhlenberg (1999) pointed out, young adults have to translate their formative experiences in childhood and adolescence into action contexts of the contemporary social structure. The discrepancy between short-term transition outcomes and long-term returns, results from the contingency of life courses. The social structuration of life courses implies the individual shaping of one's biography by taking or evading risks (O'Rand, 2003), constructing and rewriting life scripts, investing time and resources for achieving, maintaining or improving one's standard of living.

What Archer (2012) called "contextual incongruity" poses the question, to what extent can values, aspirations, and orientations really be transmitted from parents to their offspring? Youth have to shape their transitions from education to employment in economic and socio-cultural contexts that differ from their childhoods and from their parents' experiences. Over the last decades, "socialization has been decreasingly able to 'prepare' for occupational and life style opportunities" (Archer, 2012, 82). For example, fathers did not need the BA and had stable employment, and mothers were part-timers, whereas both their sons and daughters study for the BA and expect flexible employment and unstable careers.

Micro-social models must be linked with concepts specifying patterns of development in context. Moreover, there is no direct link between macro-level structures and micro-level processes: the meso-level of institutions intervenes. This complexity must be considered in cross-national comparisons of youth transitions. A complete analysis of causes of disadvantage in adolescence and young adulthood would require a conceptual multi-level framework that captures the entire macro-meso-micro link: time-dependent decision-making and action in changing social and institutional contexts and varying economic circumstances.

Furthermore, for comparative analyses a sound theoretical model is required that includes institutional arrangements and the changes in such arrangements resulting from the impact of globalization – a model more specific than the popular concept of welfare regimes (see Mayer, 2009). The standard multi-country comparisons like the Programme for International Student Assessment (PISA) are lacking the specifications that are essential for deriving sound conclusions about the life course outcomes of various "transition regimes". The transition to young adulthood is contextualized by institutionalized pathways in education and employment, which provide resources and guidance. However, without parental support and employment prospects young people are at a loss in predicting their returns on investment in education.

To better understand and explain how the relationships between family, school, neighbourhood, labour markets, and institutions unfold, and how they promote or restrict the timing, duration and outcome of transitions to adulthood, more qualitative longitudinal case studies to supplement large scale life course study would be desirable. Such an approach would improve our capacity to explain why youth living in different social contexts decide to embark on academic, vocational or precarious pathways and how they are coming to terms with the intended and unintended biographical consequences.

References

Archer, M. S. (2012). *The reflexive imperative in late modernity*. Cambridge: Cambridge University Press. http://dx.doi.org/10.1017/CBO9781139108058

Blossfeld. H.-P., Klijzing, E., Mills, M., &Kurz, K.(eds.). (2005). *Globalization, uncertainty, and youth in society*. London: Routledge.

Brand, J.E., & Xie, J. (2010). Who benefits most from college? Evidence for negative selection in heterogeneous economic returns to higher education. *American Sociological Review 75*, 273-302. http://dx.doi.org/10.1177/0003122410363567

Buchmann, M. C., & Kriesi, I. (2011). Transition to adulthood in Europe. *Annual Review of Sociology 37*, 481-503. http://dx.doi.org/10.1146/annurev-soc-081309-150212

Crosnoe, R. & Jonson, M.K. (2011). Research on adolescence in the 21st century; *Annual Review of Sociology 37*, 439-460. http://dx.doi.org/10.1146/annurev-soc-081309-150008

Dannefer, D. & Uhlenberg, P. (1999) Paths of the life course: A typology. In V.L. Bengtson, & K.W. Schaie, (Eds.), *Handbook of Theories of Aging* (pp.306-326). New York: Springer.

Diewald, M., Solga, H., & Goedecke, A. (2006) Old assets, new liabilities? How did personal characteristics contribute to labour market success or failure after 1989? In: Diewald, M, Goedecke, A. & Mayer, K.-U. (Eds.), *After the fall of the wall: East German life courses in transition* (pp. 65-88). Stanford: Stanford University Press. http://dx.doi.org/10.11126/stanford/9780804752084.003.0004

Elder, G.H. Jr. (1995). The life course paradigm: Social change and individual development. In Moen, P., Elder, G.H., & Lüscher, K. (Eds.), *Examining lives in context: Perspectives on the ecology of human development* (pp. 101-136). Washington, DC: American Psychological Association. http://dx.doi.org/10.1037/10176-003

Fleeson, W. (2001). Towards a structure-and- process-integrated view of personality; traits as density distribution of states. *Journal of Personal and Social Psychology 80*, 1011-1027. http://dx.doi.org/10.1037/0022-3514.80.6.1011

Groh-Samberg, O., & Voges, W. 2014. Precursors and consequences of youth poverty in Germany. *Longitudinal and Life Course Studies 5*, 151-172. http://dx.doi.org/10.14301/llcs.v5i2.281

Halperin, S. (ed.) (1998). *The Forgotten Half Revisited. American Youth and Young Families, 1988-2008*. Washington, DC: American Youth Policy Forum.

Heinz, W.R. (2009). Structure and agency in transition research. *Journal of Education and Work 22*, 391-404. http://dx.doi.org/10.1080/13639080903454027

Hitlin, S., & Elder, G.H. Jr. (2007). Time, self, and the curiously abstract concept of agency. *Sociological Theory 25*, 170-191. http://dx.doi.org/10.1111/j.1467-9558.2007.00303.x

Lareau, A. (2004). *Unequal childhoods: Class, race, and family life*. Berkeley: University of California Press.

MacMillan, L. (2010). *The intergenerational transmission of worklessness in the UK*. Bristol: CMPU.

Mayer, K.U. (2009). New directions in life course research. *Annual Review of Sociology 35*, 413-433. http://dx.doi.org/10.1146/annurev.soc.34.040507.134619

Micklewright, J., & Anders, J. (2013). Teenagers' changing expectations of applying to university; working paper. London: University of London, Institute of Education.

Mortimer, J.T. (2003). *Working and growing up in America*. Cambridge: Harvard University Press.

Mortimer, J.T., Zhang, F.L., Hussemann, J., & Wu, C-Y. 2014. Parental economic hardship and children's achievement orientations. *Longitudinal and Life Course Studies 5,* 105-128. http://dx.doi.org/10.14301/llcs.v5i2.271

O'Rand, A.M. (2003). The future of the life course: Late modernity and life course risks. In Mortimer, J.T. & Shanahan, M.J. (Eds.), *Handbook of the life course* (pp. 693-702). New York: Kluwer Academic. http://dx.doi.org/10.1007/978-0-306-48247-2_33

Roberts, B., Wood, D., & Smith, J.L. (2005). Evaluating five factor theory and social investment perspectives on personality trait development. *Journal of Research in Personality 39*, 166-184. http://dx.doi.org/10.1016/j.jrp.2004.08.002

Schoon, I. 2014. Parental worklessness and the experience of NEET among their offspring. *Longitudinal and Life Course Studies 5*, 129-150. http://dx.doi.org/10.14301/llcs.v5i2.279

Sewell, W. A. (1992). A theory of structure: Duality, agency, and transformation; *American Journal of Sociology 98*, 1-29. http://dx.doi.org/10.1086/229967

Shildrick, T., MacDonald, R., Furlong, A., Roden, J. & Crow, R. (2012) Are 'cultures of worklessness' passed down the generations? York: Joseph Rowntree Foundation.

Staff, J., Johnson, M.K., Patrick, M., & Schulenberg, J. 2014. When teenage work disappears. *Longitudinal and Life Course Studies 5*, 173-188. http://dx.doi.org/10.14301/llcs.v5i2.275

Standing, G. (2011). *The precariat. The new dangerous class*. London: Bloomsbury. http://dx.doi.org/10.5040/9781849664554

Valentine, C.A. (1968). *Culture and Poverty.* Chicago: University of Chicago Press.

William T. Grant Foundation (1988) *The forgotten half.* Washington, DC: W.T.Grant Foundation.

Wissenschaftszentrum für Sozialforschung Berlin (WZB). (2013). *Datenreport. Ein Sozialbericht für die BRD*. Berlin: WZB.

Longitudinal and Life Course Studies 2014 Volume 5 Issue 2 Pp 199 – 204 *ISSN 1757-9597*

COMMENTARY: Youth, economic hardship, and the worldwide Great Recession

Robert Crosnoe
University of Texas at Austin
crosnoe@austin.utexas.edu

(Received March 2014 Revised April 2014) http://dx.doi.org/10.14301/llcs.v5i2.296

Commenting on the plight of young people during the Great Recession, economist Richard Freeman remarked (Estes, 2011), "These people will be scarred, and they will be called the 'lost generation'." These words are quite stark, but they speak to the gravity of the situation at hand, the high stakes involved—not just for young people but for society as a whole.

Whether today's youth are indeed scarred and lost (or not) has generated a great deal of social and behavioral research in the last several years. This attention is certainly not surprising. How young people fared during this economic downturn is of great importance to policy and practice; for example, economics research can quantify who has been hardest hit, who is the most vulnerable in the future, who needs the most help, and what the price tag might ultimately be. At the same time, this issue has broad theoretical significance across disciplines. Capturing the interplay of macro-level societal trends and micro-level personal experiences, it embodies the very core of the sociological imagination, life course theory, human ecology, and many other perspectives in sociology, demography, developmental science, and economics (Grusky, Western, & Wimer, 2012).

The four articles in this Special Section are part of a new tradition of Great Recession research focused on children, adolescents, and young adults. They grew out of a series of activities and meetings (of which I was a part) funded by the Society for Research in Child Development, the Economic and Social Research Council (UK), and other organizations across several countries, as part of the growing concern over the very possibility that we might have a lost generation (or lost generations) on our hands. Like so many studies of the effects of social change on the individual life course (Silbereisen, 2005; Elder, 1999), the story emerging from these four articles is a complicated one. Yes, the Great Recession has been bad for young people in general, but it has been far worse for some than others. Moreover, the risks of the Great Recession can only be understood at the intersection of contextual variation (in terms of current circumstances and past histories) and individual differences.

From this highly general conclusion, I want to draw out several themes for further discussion from this notably interdisciplinary and cross-national enterprise. The first set of themes concerns what was found in the four studies, and the second set of themes concerns where these four articles are pointing us to go in the future. In doing so, I recognize just how difficult studying the effects of something like the Great Recession on young people can be. It is a true challenge. Because no one (well, almost no one) predicted the Great Recession beforehand, we have to rely on "accidental data", or data collections that just happened to be underway when the Great Recession unfolded. By definition, then, these data collections were not actually designed to study the Great Recession. The implicit cross-cultural comparisons in this collection of four articles adds another layer of complexity, as comparing and contrasting the findings of four sets of accidental data with different measurement and sampling strategies is a tall order indeed.

What was found

Reviewing the findings of the four studies and looking for commonalities, several things stick out to me.

First, the Great Recession hit young people hard, but it was not necessarily a complete disaster across the board.

The researchers and research teams featured in this Special Section assessed recession effects in different ways, both in terms of the economic hardships of individual families (e.g., Schoon in the United Kingdom) and through broader comparisons of historical timing before and after the Great Recession (e.g., Staff and colleagues in the United States). In general, both the direct and indirect effects of the Great Recession, however measured, on young people were significant, but they could best be characterized as moderate in magnitude—sizeable, yes, but not as big as might have been expected or feared. This generalized attenuation of recession effects across the studies, likely reflects the fact that sample averages subsumed substantial variability in effect size. The Great Recession and its associated family hardships mattered a great deal in some segments of the population and less so in others. For example, boys appeared to be more vulnerable than girls in the United Kingdom (Schoon) and Minnesota (Mortimer et al.). As another example, in Germany, young adults who were single appeared to be more vulnerable than those who were partnered (Groh-Samberg et al.). These patterns of variability bring to mind Elder's (1999) pioneering study of children growing up during the Great Depression of the 1930s in the United States. His influential work, which is a clear foundation of the studies in this Special Section, revealed how both inequality and resilience converged to inject diversity into (and ultimately mitigate) the overall effects of the economic crisis on children.

Second, how young people experienced the Great Recession was deeply rooted in their family histories, especially parents' pasts.

Mortimer and her colleagues reported that the negative association between family economic problems and recession-era youths' future aspirations in Minnesota was exacerbated when parents had histories of unemployment. This finding suggests that parents became sensitized to hard times through their own personal histories of hardship in ways that might have allowed pessimism to filter down to their children. Similarly, Schoon found that growing up with persistently unemployed parents increased the odds of young people being out of work and school during the Great Recession in the United Kingdom, and Groh-Samberg and colleagues found that seemingly independent young adults' "real" experiences of poverty — before and after the Great Recession in Germany — were predicated on how much they could draw on their parents' financial resources. The connected socio-economic trajectories of parents and youth in these articles represent linked lives, to borrow a term from life course theory. Of course, the ability to delve into these linked lives was constrained by the availability of data, as measurement of family histories was limited across the data sets. Finer-grained family histories — encompassing parents work, education, financial, relationship, and residential statuses and transitions — need to be considered, but such histories put great demands on data collection.

Third, some of the variability in the consequences of the Great Recession for young people resulted from psychological buffers.

The perceptions, attitudes, and general orientations of young people seemed to condition how they lived through the Great Recession and any associated family economic troubles, evidence of individual differences within contextual variation. We saw an example of such buffering in the academic expectations of young people in the study by Schoon and colleagues in the United Kingdom. When young people held onto more positive dreams of the future, their parents' economic troubles posed less risk to their socioeconomic functioning as young adults. The study by Mortimer and colleagues in Minnesota revealed an interesting twist to this buffering pattern within families. The academic orientations of parents in Minnesota, back when they had been adolescents themselves, appeared to be a buffer protecting their children from the risks of their economic troubles many years later. Something that they developed as young people helped their own children later on. These findings drive home the fact that individual people may react to the same situation in very different ways, another way that the four studies in the Special Section align with life course theory and other developmental perspectives.

Fourth, recovery is coming slow and will likely take a while.

Technically, the Great Recession ended in the late 2000s (2009 in the U.S. according to the National Bureau of Economic Research, which decides such things). Yet, the "felt" recession has lingered far

longer and continues even today. Significantly, none of the longer-term studies in this Special Section indicated any real improvement in young people's fortunes as the Great Recession supposedly faded. The findings by Staff and colleagues in the U.S. that teen unemployment did not rebound when the economy rebounded were particularly striking in this regard. When will the recovery happen? To answer this question, we can look at studies of the consequences of past recessions on socio-economic attainment by economists in the U.S., Canada, Japan, and other countries. These studies generally show that young people who enter adulthood during recessionary times generally do not make up their lost earnings and job statuses for many years or even decades; some do not at all (Oreopoulos, von Wachter, & Heisz, 2012; Genda, Kondo, & Ohta, 2010; Kahn, 2010). That the Great Recession was so much more severe than these past recessions, therefore, is sobering indeed.

Where to go now

The four studies in this Special Section did have some limitations, and they also leave many open questions. In these ways, they offer suggestions about where future research on the Great Recession (and any future recessions) can take us.

First, the Great Recession is an economic event but one with non-economic outcomes that need to be explored.

Because any economic downturn, especially one as dramatic as the Great Recession, are so deeply relevant to the short- and long-term socio-economic circumstances of families, there is an understandable tendency to view recession effects on young people through the lens of human capital, occupational status, and other markers of socio-economic functioning. Despite many differences in focus, setting, and approach, all four of the studies conceptualized youth outcomes in such terms, considering aspects of educational attainment, income and earnings, and employment. Certainly, these outcomes are important, even crucial, but they do not represent the only ways in which young people might be vulnerable. Mental health is clearly a concern during a major (and cataclysmic) historical event like the Great Recession, as are other aspects of socio-emotional functioning that may change in or out of sync with changing economic fortunes. I would also encourage more consideration of how the effects of the Great Recession have gotten under the skin; in other words, using biomarkers and other physiological data to understand the residue of the Great Recession within the body (McDade, 2001).

Second, the Great Recession can also be thought of as a local phenomenon.

The four studies in this section captured the Great Recession in a macro-level way (e.g., historical timing in the studies by Staff and colleagues in the United States and by Groh-Samberg and colleagues in Germany) or in a micro-level way (e.g., parents' unemployment and financial problems in the studies by Mortimer and colleagues in Minnesota and Schoon in the United Kingdom). The meso-level middle ground of local economic conditions (broadly defined as states or provinces or more narrowly defined as metropolitan areas or neighborhoods) was not taken into account in any of the articles. In the U.S., for example, the Great Recession was a highly regional and state-specific phenomenon. The upper Midwest and states with strong energy industries weathered the storm well (e.g., South Dakota and Texas), but many states that are dependent on heavy manufacturing and/or had real estate bubbles fared poorly and have continued to struggle after the recession officially ended (e.g., Nevada and Michigan). Even within states, rural, suburban, exurban, and urban areas fared differently (Bureau of Labor Statistics, 2012). That kind of variation is lost when state-, city-, and zip code-level economic indicators are not used to study recession effects on young people and their families.

Third, valuable country-level comparisons of young people in the Great Recession can be taken deeper.

Essentially, the four articles in this Special Section line up three country-specific pictures of young people during the Great Recession that readers can then compare to each other. This cross-national comparison could be made more direct and systematic in the future by harmonizing data sets across countries through new statistical techniques (e.g., integrated data analysis, or IDA; see Curran & Hussong, 2009), pooling all data across countries into the same sample, interacting country-specific identifiers in this pooled sample with recession markers (e.g., cohort timing, economic conditions),

and then including various country-level characteristics as mediators of any observed differences in recession effects across countries. Through such an approach, we can better understand why youth in one country fared better (or worse) during the Great Recession than youth in another country, paying attention to how countries might differ both prior to and during the Great Recession, that would shape how it was experienced by young people. Of course, this approach also requires that a more substantial number of countries be included, not just the three featured here. It also requires some sacrifice of the depth of data and scope of sampling, as many differences in the extant data sets would have to be addressed. In other words, there are extant data to be harmonized after the fact, but the ideal scenario would be to coordinate data collections across countries moving forward, to avoid some of these limitations to systematic and in-depth cross-country analyses.

Fourth, policy relevance should be assessed when studying both risk and resilience in young peoples' experiences of the Great Recession.

As already noted, some of the most interesting protective factors (i.e., something that buffers against the negative effects of a risk factor) in the four studies in this Special Section were psychological or attitudinal in nature. Theoretically, these factors are important to the life course, but thinking about how they might be manipulated (e.g., developed, enhanced) through policy intervention is challenging. If academic orientation matters, how do we promote academic orientation? This question is a challenging one, realistically. Compared to more concrete contextual factors like school organization, social services, or community resources, these more psychological or interpersonal buffers do not seem altogether policy amenable. Yet, the practical value of Great Recession research will be increased if we seriously consider policy amenability when building our conceptual models—not just what matters to youth outcomes but also what we can do something about. Policy relevance is not the only value of a study, of course, but it is a value that warrants attention.

Conclusion

To end, I want to go back to the beginning, to that economist's prediction that today's youth are scarred and could very well be a lost generation because of the Great Recession that they have endured during such a critical phase of life. The truth is that we do not yet know if this dire prediction is true, but we will know in the future if studies like those by Mortimer, Schoon, Groh-Samberg, Staff, and their colleagues continue and go deeper. They give us a window into the ramifications of a specific historical event (one that likely will repeat itself in the future if history is a guide) while also opening up a window into far more general life course dynamics. As such, they are simply good social science.

References

Bureau of Labor Statistics. 2012. *The recession of 2007-09*. www.bls.gov/spotlight

Curran, P. J., & Hussong, A. M. (2009). Integrative data analysis: The simultaneous analysis of multiple data sets. *Psychological Methods, 14,* 81-100. http://dx.doi.org/10.1037/a0015914

Elder, G. H. Jr. (1999). *Children of the Great Depression: Social change and life experience (25th anniversary edition)*. Boulder, CO: Westview.

Estes, A. C. (2011). More signs that American youth are a lost generation. *The Atlantic*. September 22, 2011.

Genda, Y., Kondo, A., & Ohta, S. (2010). Long-term effects of a recession at labor market entry in Japan and the United States. *Journal of Human Resources, 45,* 157–96. http://dx.doi.org/10.1353/jhr.2010.0005

Groh-Samberg, O., & Voges, W. 2014. Precursors and consequences of youth poverty in Germany. *Longitudinal and Life Course Studies 5*, 151-172. http://dx.doi.org/10.14301/llcs.v5i2.281

Grusky, D., Western, B., & Wimer, C. (Eds). (2012). *The Great Recession*. New York: Russell Sage.

Kahn, L. B. (2010). The long-term labor market consequences of graduating from college in a bad economy. *Labour Economics, 17,* 303–16. http://dx.doi.org/10.1016/j.labeco.2009.09.002

McDade, T. W. (2001). Lifestyle incongruity, social integration, and immune function in Samoan adolescents. *Social Science and Medicine, 53*, 1351-1362. http://dx.doi.org/10.1016/S0277-9536(00)00414-7

Mortimer, J.T., Zhang, F.L., Hussemann, J., & Wu, C-Y. 2014. Parental economic hardship and children's achievement orientations. *Longitudinal and Life Course Studies 5,*105-128. http://dx.doi.org/10.14301/llcs.v5i2.271

Oreopoulos, P., von Wachter, T., & Heisz, A. (2012). The short- and long-term career effects of graduating in a recession. *American Economic Journal: Applied Economics, 4,* 1–29.

Schoon, I. 2014. Parental worklessness and the experience of NEET among their offspring. *Longitudinal and Life Course Studies 5*, 129-150.

Staff, J., Johnson, M.K., Patrick, M., & Schulenberg, J. 2014. When teenage work disappears. *Longitudinal and Life Course Studies 5*, 173-188. http://dx.doi.org/10.14301/llcs.v5i2.275

Silbereisen, R. (2005). Social change and human development: Experiences from German unification. *International Journal of Behavioral Development, 29*, 2-13. http://dx.doi.org/10.1080/01650250444000478

Longitudinal and Life Course Studies 2014 Volume 5 Issue 2 Pp 205 – 226 *ISSN 1757-9597*

Holistic housing pathways for Australian families through the childbearing years

Melanie Spallek
m.spallek@uq.edu.au
Michele Haynes
Andrew Jones
University of Queensland, Australia

(Received November 2013 Revised April 2014)

Abstract

For the previous generation, the typical housing tenure pathway in Australia was more clearly defined, with young adults leaving the family home to marry and experience the birth of the first child while residing in a rental home, before entry into home ownership. For the first time in Australia, longitudinal data is available that allows the examination of housing tenure transitions along with other life events, in particular the birth of children, marital transitions and changes in employment. Sequences of tenure transitions and life events were derived for a large sample of individuals using ten waves of data (2001-2010) from the longitudinal Household Income and Labour Dynamics in Australia (HILDA) survey, with a focus on families with children or of childbearing age. The statistical method of multi-channel sequence analysis was used to identify a typology of housing pathways from these data sequences. Half of all individuals in the sample do not experience any transitions in housing tenure status during the period of the survey and these people record notably fewer transitions in marital status. The main typologies identified were related to transitioning into home ownership, with the birth of a child occurring either before or after the transition. Previously, some individuals also entered home ownership before the birth of their first child rather than after, but it was not acknowledged as a major housing pathway as it is now. In this study, the majority of housing tenure and life event sequences showed that individuals were already married by the time of transitioning into home ownership. Pathways are now more diverse with transitions into home ownership often occurring both before and after the birth of a child, with marriage preceding the decision to buy a home.

Keywords: Housing tenure, pathways, sequence analysis, multi-channel, life course, family, children, longitudinal survey data

Introduction

Existing literature assumes that there is an appropriate order and timing for transitions of key life-events and it has been hypothesised that diverting from this order will lead to negative outcomes later on in life (George, 1993; Harley & Mortimer, 2000; Hogan & Astone, 1986). The traditional Australian family life cycle in the 1950s was clearly defined as entering into marriage, the birth of the first child while remaining in a rental home, followed by an entry into home ownership, the birth of more children and then remaining in this same home until old age (Kendig, 1981; Kendig, 1984; Winter & Stone, 1999). This was challenged by the concept of 'choice', which led to the loosening of traditions and resulted in a diversity of life styles (Clapham, 2005; Giddens, 1991). Many of these changes are associated with changing life course patterns, for example, individuals are now spending more time in further education, which can explain delayed entry into the labour force; union formation that may or may not result in marriage, and timing for the birth of a first child that has been pushed back within a person's life course in the twenty-first century (Beer & Faulkner, 2009).

Employment is one factor that characterises a household and influences housing demand, as housing needs to be paid for and for many, employment provides the income (Clapham, 2005). Specifically for dual income families, the decisions on employment, fertility and housing are inter-connected.

The trends examined in this paper have taken place against a background of increasing difficulty for young individuals and families to attain home ownership. In Australia the main pathway into first home ownership is via the private rental market. In contrast, social housing is a small, residualised sector, which for many years has played little role in home ownership attainment by young families. Many Australians in their 20s and 30s, after leaving the family home, rent in the private sector while saving for a deposit to attain a mortgage and begin the process of paying off their 'own home'. Between the 1950s and mid-1970s the predominant housing career of young Australians was clear: after living with parents or in the private rental market, they married, had their first child and then entered home ownership (Yates, 2007). This pattern underpinned Australia's high rate of home ownership (approximately 70 percent of all households) since the late-1950s. However, since the mid-1970s, younger households have found it increasingly difficult to make this transition from renting in the private market into home ownership. Yates has documented the steady decline in age specific home ownership rates for younger households from the mid-1970s to the early twenty-first century. Using Census data, she records that between 1976 and 2001, home ownership rates for those in the 25-29 year old age group declined by 11 percentage points (from 54 per cent to 43 per cent), by 10 percentage points (from 67 per cent to 57 per cent) for those in the 30-34 year old age group, and by 6 percentage points (from 72 per cent to 66 per cent) for those in the 35-39 year old age group (Yates, 2007). This decline has led many observers including Yates (2007) to ask, 'Has the great Australian dream (of home ownership) ended?'

A number of explanations have been suggested for the increasing difficulties faced by young Australians in attaining (and retaining) home ownership (Yates, 2007, 2008). Of particular significance is the increase in the deposit gap to income ratio, which in the 2000s was 3 to 4 times greater than it had been in the 1970s (Yates, 2007). This was exacerbated by a spike in house prices in the early 2000s, which resulted in a doubling of the house price to income ratio from its long run average. Generally, house prices have remained at high levels throughout the study period (2001-2010); Australia did not experience a marked fall in house prices associated with the Global Financial Crisis (GFC) as happened in several other countries. The capacity of young families to obtain a deposit and meet repayments has also been impacted negatively by long-term trends towards less secure employment, and increases in separation and divorce. These factors resulting in the decline in the proportion of young households who have attained home ownership is the backdrop to the data reported in this paper, which provides detailed evidence concerning the impact of family formation (and dissolution), fertility and related factors on the transition to first home ownership in the 2000s.

Understanding the pathways through housing transitions is of particular importance in Australia, as the Australian Age Pension is set at a lower rate compared to other countries, assuming outright home ownership and hence low housing costs at the time of retirement (Yates & Bradbury, 2010). This has long term implications for families that do not attain home ownership, making them vulnerable to poverty in retirement. The concept of linking housing transitions to life events was first developed by Rossi (1955), who concluded that housing transitions are a result of adapting housing needs to changes that have occurred throughout the life course. From around the period 1970-1980 this concept received more attention, and the associated body of literature reported a correlation between housing and key life events (Kendig, 1984; Payne & Payne, 1977). In fact, it was reported that households ascend three separate but related ladders, namely the employment, the life stage (including relationship formation and birth of first and consecutive children) and the housing ladder, referred to as a housing ‘career’.

The term 'career', however implies an upwards notion, and Kendig (1982) defined housing careers as uniform, meaning most of the population follow the same career with the common aim of home ownership. But recent literature (Beer & Faulkner, 2009; Clapham, 2005) on housing pathways in Australia has emphasised the increasing diversity and discontinuity of housing pathways and the

emphasis has been on changes to housing 'pathways' rather than housing 'careers'. Badcock and Beer (2000) have found that housing careers do not only move upwards. They acknowledged the falling out of home ownership, and furthermore, that not everyone is making the desirable transition to home ownership. Hence, the expression "housing pathways" appears to reflect the current diverse sequence of housing transitions more appropriately.

Sociological research using retrospective life histories (Baizan, Aassve & Billari, 2004; Beer, Paris, Faulkner & Clower, 2011; Boyle, Kulu, Cooke, Gayle & Mulder, 2008; Feijten & Mulder, 2002; Kulu, 2008; McDonald & Merlo, 2002; McLeod & Ellis, 1982) has previously shown how life course transitions such as entering marriage, birth of a child, getting a new job, all influence the likelihood of a change in housing tenure status. Relationship formation and birth of children were identified as the primary triggers for a housing transition. In recent times, these life-events have become less predictable due to underlying changes related to the acceptance of social circumstances: the social expectation to marry has declined, and there are now several other socially acceptable alternatives to traditional marriage, including cohabiting, single life and same sex relationships (Hunt, 2005). In Australia, the birth of the first child is no longer a primary trigger for a housing transition, with one third of Australian women predicted to be childless in the future, while on the other hand divorce is increasingly associated with tenure transitions (Beer & Faulkner, 2009).

The decision to undertake a tenure transition is also based on opportunities in terms of availability and accessibility of suitable housing and financial resources. Housing requires payment, and therefore it is important that a family has the financial capacity to pay for it, which in turn is strongly linked to income, education, employment status and finance, as well as household type and lifestyle choices (Clapham, 2005; Giddens, 1991).

Most recent Australian research on housing pathways has been conducted taking a qualitative approach or by using primarily quantitative cross-sectional data, focussing on transitions between tenure states at a point in time (Beer & Faulkner, 2009; Beer et al., 2011). However, to fully understand the inter-relationships among housing transitions and life course events, longitudinal data is required (George, 1993). During the twenty-first century there has been an increase in the number of studies analysing the interaction between life-events and housing transitions using longitudinal quantitative survey data and most of these have been conducted by international researchers (Clark, Deurloo & Dieleman, 2003; Clark & Huang, 2003; Kulu, 2005; Kulu & Milewski, 2007; Michielin & Mulder, 2008; Mulder, 2006; Mulder & Lauster, 2010; Pollock, 2007).

Many authors have previously used event history analysis to analyse time until an event occurs (Feijten, 2002; Ginsburg, Steele, Richter, & Norris, 2010), such as time until birth of a child or time until a change in tenure status. However, the focus with this type of analysis is on the transition itself, detaching it from past and future events. Sequence analysis on the other hand considers the whole sequence of events, putting the transitions into context. In sociology research, sequence analysis is used to address questions such as "Do people share a common (life) trajectory, and if so, how is it defined?" In reality, people deal with multiple roles simultaneously and one single sequence cannot capture an actual insight into the life course (Elder, 1985, 2003). Hence, more than one sequence should be observed in parallel over the same period of time to explain an individual's life experience (Stovel & Boland, 2004). To better understand patterns of housing tenure transitions, it is crucial to also examine the inter-relationships with transitions in other key life events such as marital status, presence and age of children and employment status. This acknowledges the principle of linked lives which emphasises that individuals are making active decisions and active choices based on opportunities and so create their own pathway, which is the basic principle of the life course approach (Elder, 1978; Neugarten & Datan, 1973). Some writers have referred to the approach that analyses multiple inter-related pathways as 'holistic' pathways (Pollock, 2007).

Australian research in this area has been extremely limited. The HILDA panel survey is the only source of longitudinal data on housing transitions in Australia and with more than ten waves of data it is now possible to analyse sequences of life events in a ten year window to identify housing tenure pathways for families of childbearing age with and without children under

the age of 18 years, as defined in the following Section 2.1.

In this paper, housing tenure pathways were investigated using Australian longitudinal panel data over the time period from 2001-2010 and in the context of life experiences of Australian families of childbearing age. Three research questions are addressed:

1. What are the main housing pathways in relation to tenure status that can be identified?
2. What are the inter-relationships between housing pathways and marital status, employment and birth?
3. When do families enter or exit home ownership in relation to the other life-events?

In Section 2 the selection criteria of the analytic sample are described, followed by the list of variables included in the analysis in this paper. Section 3 informs the analytic strategy and results are presented in Section 4 followed by a concluding discussion in Section 5.

2. Analytic Sample and Variables

2.1 Sample

For this research, data from ten successive waves of the HILDA longitudinal survey were analysed. HILDA is a nationally representative household-based panel study that has been collecting data annually since 2001. HILDA provides a rich source of data on economics, well-being, labour market and family dynamics over the life course. A total of 7,682 households were interviewed at wave one, which resulted in 13,696 interviewed individuals aged 15 years and older. More information about the study design can be found online in the first report of the HILDA discussion papers series by Wooden and Watson (2001).

The analytic sample is restricted to families with children or who are of childbearing age, covering the time period from 2001-2010. Families of childbearing age include individuals with own children under the age of 18 years either living in their household or elsewhere, independent of the individuals' marital status at wave one. With this definition, couple families, as well as single parent families, both male and female, are included in the sample. Additionally, individuals without children but of childbearing age were included if they were males aged 44 years or less and females aged 41 years or younger at wave one. These age limits were chosen, as the occurrence of a birth decreases beyond this age. A sequence analysis of data across all ten waves requires a dataset that is balanced, with observations at each wave for all individuals. Hence, only individuals who were interviewed at each wave from 2001 to 2010 were included. The final analytic sample included 4,345 individuals of childbearing age and who had a complete interview pattern; hence all individuals included in the sample were followed through for ten years, regardless of their experiences.

2.2 Variables

The main focus of this study is housing pathways, particularly related to tenure change. Housing pathways can be translated into sequences of housing tenure states. Specific life events were also examined in parallel to changes in tenure status, in particular changes occurring between waves in marital status, age of youngest child in the household and changes in employment status. A state or status records basic information about an individual, and in our research this information is four dimensional, covering information on housing tenure status and demographic information. Housing tenure status was categorised into [1] paying off/owning a home (n=2,453 at wave 1, of which n=443 had achieved outright home ownership), [2] renting (private sector) (n=1,024), [3] renting (public sector)(n=142), [4] other (n=81) and [5] living with parents (n=645). The housing tenure status 'renting (private sector)' was defined as renting from a private landlord/real estate agent, a caravan park owner/manager, an employer, or from a manager of a complex/village, whereas the housing tenure status 'renting (public sector)' was defined as renting from a government housing authority, or a community/cooperative housing group. Housing tenure status categorised as 'other' included rent free tenure arrangements and renting arrangements where it was not further specified who the household rents from. Marital status was categorised into [1] legally married (n=2,266 at Wave 1), [2] de facto (n=550), [3] separated, divorced and widowed (n=314) and [4] never married and not de facto (n=1214). Age of youngest own child was grouped into four categories, with [0] indicating no own children present in the household (n=1,935 at Wave 1), [1] own child aged five and under present in the household (n=1,305), [2] own child in the household aged 6-18 years (n=1,099), and [3] representing own adult child(aged 18 and above) are present in the household (n=6 at wave

one, but consistently increases to n=281 at wave 10). Regarding employment status, three main groups were considered, [1] employed (n=3,308), [2] unemployed (n=203) and [3] not in the labour force (n=834).

3. Analysing Sequences

In this paper, we consider four life event sequences, with transitions in housing tenure of primary interest. Sequences of transitions in marital status, employment status, and age group of youngest own child in the household were considered as potentially motivating events for a transition in housing tenure. Before analysing the transitions as sequences, transition probabilities for housing tenure and life events were explored separately. Transition probabilities represent the overall probability of moving from one state to another or remaining in the same state. In our paper we refer to wave to wave transition probabilities, as these probabilities are not based on individual longitudinal characteristics and are neither linked to a point in time (Gabadinho, Ritschard, Muller & Studer, 2011). This step of analysis allowed the identification of transitions that were more likely to occur than others. The distributions of sequences were then explored separately by examining the ten most frequent sequences for each of the corresponding transition variables, that is, housing tenure status, marital status, employment status and age group of youngest child. Furthermore, for each of these demographic variables, transversal state frequency plots of tenure status were produced. Details for the ten most frequent sequences as well as the transversal state frequency plots (Figures A.5-A.8) are shown in the Appendix.

3.1 Defining multi-channel sequences

Multi-channel sequence analysis (MCSA) (Gauthier, Widmer, Bucher & Notredame, 2010; Pollock, 2007) using the Optimal Matching algorithm as applied in Pollock (2007), was used to identify patterns of inter-relationships among housing tenure pathways, marital transitions, the birth of a child and changes in participation in the labour market. To represent an individual's combined status across all four variables at each wave, a four digit number was used. The first digit refers to the individual's housing tenure status, the second digit refers to the marital status, the third digit refers to the employment status and the fourth digit represents responsibility for children by age group. For example, the combined status 1211 at one point in time identifies an individual who is paying off/owning the home [1…], is in a de facto relationship [.2..], is employed [..1.], and has an own child younger than 5 years in the household […1]. Table 1 illustrates combined sequences for four pre-selected individuals in the sample. The first sequence describes the pathway of an individual who lives with his/her parents, has never been married, is employed and has no children at wave 1 in 2001 [5410]. From wave 1 to wave 2 this individual leaves the parental home and transitions to a rental home, enters a de facto relationship, remains employed and still has no children [2210]. Between wave 4 and wave 5 this individual transitions from a de facto relationship to marriage [2110], and transitions into home ownership in the following wave [1110]. A large number of different transitioning patterns can be observed (there are 180 possible combinations to explain a single state using these four digits) and therefore the probability that two individuals follow exactly the same ten year trajectory is small.

Table 1. An illustration of four combined sequences of events over ten years

	Wave-to-wave sequence
Person	2001-2002-2003-2004-2005-2006-2007-2008-2009-2010
1	5410-2210-2210-2210-2110-1110-1110-1110-1110-1110
2	2210-2210-2210-2210-2211-2211-2111-2111-1111-1111
3	2220-2210-2210-2210-2211-2211-2111-2111-1111-1111
4	5410-5410-5410-5410-5410-5410-5410-1210-1210-1110

Digit 1= tenure status, digit 2=marital status, digit 3=employment status, 4=age group of youngest child

3.2 Approach to Analysis

Sequence analysis is based on establishing dissimilarities between sequences. It provides information about which sequences are more similar to one another compared to others, by comparing every possible pair of sequences and calculating the 'cost' of transforming one sequence into another. Several algorithms have been used to calculate these transformation costs; these include Optimal Matching, Hamming, and Dynamic Hamming (Gabadinho et al., 2011). For our multi-channel sequence analysis, we employed the commonly used Optimal Matching (OM) algorithm to calculate the cost to transform one sequence into another (Abbott & Tsay, 2000; Martin & Wiggins, 2011). OM allows three different operations for the transformation process, insertion and deletions (where a state is inserted or deleted) collectively referred to as *indel* operations, and substitutions or replacements, where one state is substituted by another. Every operation has a cost assigned. Setting the cost for operations is not straightforward and the decision is generally based on known or observed relationships between the states. By transforming one sequence into another, the overall cost is calculated by summing each of the relevant substitution and *indel* costs. The smallest overall cost to transform one sequence into another is then referred to as the *distance* between two sequences.

The substitution costs for this analysis were defined as the inverted transition probabilities. Less likely transitions resulted in higher substitution costs, and more common transitions were assigned lower costs. *Indel* costs were set to 1.5, which leads to the algorithm favouring substitutions over insertions (Allison, 2009). When the distances were established in terms of costs, Ward's method for hierarchical clustering was used to group individuals with the most similar sequences together, reducing the data to a group of homogenous clusters (Kaufmann & Rousseeuw, 2005). The most frequent representative sequence for each cluster, was extracted according to a specified representative criterion to characterise the most common sequence of life experiences of individuals within each cluster. The representative criterion applied was a redundancy threshold of 10%, meaning that one sequence *x* is redundant to another sequence *y* in one cluster, if *x* is within a 10% neighbourhood radius of sequence *y*. The redundancy threshold of 10% refers to 10% of the maximum possible distance between two sequences within one cluster, as it would be calculated by the OM algorithm. Sequences are then sorted in decreasing density order and the sequence with the highest density was extracted as the representative sequence for each cluster (Gabadinho et al., 2011). The different clusters were further examined by exploring the transversal state frequencies, separately for each variable of interest, housing tenure status, marital status, employment status and age of youngest own child in the household. Transversal state frequency plots show frequency distributions of one variable at every wave and were chosen over the more standard sequence index plots, because they show the overall changes and characteristics in a cluster.

The multi-channel sequence analysis using Optimal Matching algorithm was conducted in R (R Core Team, 2013) using the package TraMineR (Gabadinho et al., 2011; Studer, Ritschard, Gabadinho & Mueller, 2011).

4. Results

The wave to wave transition probabilities indicate that individuals remained in the same tenure between waves with a high probability. Since the focus of this paper is to learn more about these people but to also investigate those who do change tenure and how this relates to changes in other life events, the sample was further classified and considered as two groups being individuals or *stayers* with stable tenure across all ten waves, and *movers* who experienced a transition between tenure types at least once during the ten waves of the survey. The 2,295 individuals in stable tenure types (*stayers*) are comprised of 1,818 (79.2%) individuals being home owners, 309 (13.5%) individuals renting (private), 55 (2.4%) individuals renting (social), 5 (0.2%) individuals in other tenure and 108 (4.7%) individuals living with their parents for the entire period from 2001-2010. The stayers (mean age 36.9 years) were also characterised by being on average eight years older at wave one than the movers (mean age 28.9 years). The stayers tend to already have children (70.5%) compared to 38.7% of movers and are more likely to be married (66.7%) compared to 35.9% of movers.

4.1 Transition Probabilities

As our focus was on the individuals who experienced at least one tenure transition

throughout the observed time period from 2001-2010, we produced transition probabilities for housing tenure states, marital status, employment status and age group of youngest own child separately for stayers and movers (Table 2). A comparison of the transition probabilities for demographic characteristics indicated differences between stayers and movers. Staying married between consecutive waves was dominant in both groups, however, moving into a de facto relationship was more likely amongst the movers (previously never married: 0.11, previously separated/married/divorced: 0.09) than amongst the stayers (previously never married: 0.04, previously separated/married/divorced: 0.05). Remaining in a de facto relationship was less likely amongst movers (0.77) compared to stayers (0.87), with individuals either transitioning into being married (0.13), or ending the relationship (0.10). The transition probabilities for employment status were relatively equally distributed with a higher probability of individuals transitioning into the labour force amongst movers (0.35) compared to stayers (0.26). The transition probabilities related to age of youngest child in the household were very similar for stayers and movers: not having children in the household for two consecutive waves had the highest probability of 0.94 in both groups. Having older children (aged 6 to 18 years) in the household for two consecutive waves was also high (stayers: 0.95; movers: 0.91) (Table 2).

Despite being defined as movers (having at least one tenure transition throughout all ten waves), the probability of staying in home ownership between two consecutive waves was still predominant with a probability of 0.86. This is equivalent to concluding that not staying in home ownership, hence 'falling out' of home ownership between two consecutive waves has a probability of 0.14. Most between wave tenure transitions had an 'upward' notion, such as transitioning from renting (private) to owning with probability 0.18, from renting (social) to renting (private) with probability 0.17, from other tenure to renting (private) with probability 0.30, or to owning with probability 0.23, and from living with parents to renting (private) with probability 0.17 (Table 2).

The substitution costs (derived from the transition rates) are then used within the Optimal Matching algorithm to calculate the dissimilarity matrix between the multi-channel sequences of housing tenure status, marital status, employment status and age of youngest child in the household. This final matrix includes the 'distances' between every possible sequence, which relates to the similarity of the multi-channel sequences. The dissimilarity matrix is then subject to a cluster analysis in order to group similar sequences together and define a typology for housing transitions and life events. For the reasons described above, this analysis was undertaken separately for movers and stayers.

Table 2. Wave to wave transition probabilities for movers and stayers

	Individuals with stable tenure					Individuals with changing tenure				
Tenure	OWN	RTP	RTS	OTH	PAR	OWN	RTP	RTS	OTH	PAR
OWN	1	0	0	0	0	0.86	0.10	0.00	0.03	0.01
RTP	0	1	0	0	0	0.18	0.73	0.02	0.05	0.02
RTS	0	0	1	0	0	0.07	0.17	0.72	0.03	0.01
OTH	0	0	0	1	0	0.23	0.30	0.02	0.43	0.02
PAR	0	0	0	0	1	0.08	0.17	0.01	0.02	0.72
Marital Status	MAR	DEF	SDW	NM		MAR	DEF	SDW	NM	
MAR	0.99	0.00	0.01	0.00		0.96	0.00	0.04	0.00	
DEF	0.08	0.87	0.01	0.03		0.13	0.77	0.02	0.08	
SDW	0.02	0.05	0.93	0.00		0.04	0.09	0.87	0.00	
NM	0.01	0.04	0.00	0.95		0.02	0.11	0.00	0.87	
Employment Status	EMP	UNE	NIL			EMP	UNE	NIL		
EMP	0.96	0.01	0.03			0.93	0.02	0.05		
UNE	0.50	0.26	0.24			0.52	0.27	0.21		
NIL	0.22	0.04	0.75			0.27	0.08	0.65		
Age of youngest child	None	0-5	6-18	>18		None	0-5	6-18	>18	
No children	0.94	0.04	0.01	0.01		0.94	0.05	0.01	0.00	
0-5	0.01	0.84	0.15	0.00		0.02	0.89	0.09	0.00	
6-18	0.02	0.01	0.95	0.03		0.04	0.02	0.91	0.03	
>18	0.20	0.00	0.00	0.79		0.26	0.00	0.00	0.74	

OWN=owning; RTP=rent(private); RTS=rent(social); OTH=other tenure; PAR=living with parents.
MAR=married; DEF=de facto; SDW=separated/divorced/widowed; NM=never married and not de facto
EMP=employed; UNE=unemployed; NIL=not in the labour force
0-5=youngest child aged 0-5 years; 6-18=youngest child aged 6-18 years; > youngest child aged >18years.

4.2 Multi-channel sequence analysis - Results

Stayers

The results from the multi-channel sequence analysis followed by the cluster analysis for grouping similar multi-channel sequences (Table 3), identified two distinct clusters for the stayers (52.8%, n=2,295), that are each represented by the following two multi-channel sequences: 1111-1111-1111-1112-1112-1112-1112-1112-1112-1112 (79.4%, n=1,823) and 5430-5430-5410-5410-5410-5410-5410-5410-5410-5410 (20.6%, n=472). For the remainder of the paper, sequences will be represented in this State Permanence Sequence (SPS) format for easier recognition of transitions; if a state does not change over a few waves, it will be stated only once followed by a number in brackets,

which identifies the number of waves the individual has been in this state. Hence, the two representative sequences can be displayed as 1111(3)-1112(7) and 5430(2)-5410(8). The transitions are now apparent, the first sequence cluster represents individuals who own their home, are married, are employed and have children under the age of 5, transitioning to having children from ages 5 to 18 years as the children continue to grow older. The second sequence cluster identifies individuals living with their parents, not married and not in a de facto relationship, not in the labour force and with no own children in the household. The transition occurring here is in the labour force status, changing from not being in the labour force, perhaps because of full-time study, to being employed.

4.3 Multi-channel sequence analysis – Results Movers

The results from the multi-channel sequence analysis and subsequent clustering procedure for the movers (47.2%, n=2050) are shown in Table 3. Five distinctive clusters were selected to gain in-depth information on housing transitions and interrelated life events (Figures 1-4). The first representative sequence for cluster one was 2112(1)-1112(9) identifying married individuals, employed, with children aged 5-18 transitioning from renting (private) into home ownership (29.3%, n=601). This cluster was described as *late home owners, post school-aged children*. Compared to the other clusters of 'movers', these individuals were oldest at wave one (mean: 34.7 years, SD 6.7). The representative sequence for the second cluster (13.8%, n=282) was 2410(9)-1410(1), embodying individuals that have never been married and are not currently in a de facto relationship, are employed and have no children, transitioning from renting (private) into home ownership. The mean age in this cluster was 29.1 (SD 9.2). This cluster was described as *single renters to owners, no children*. The third cluster, referred to as *home owners, pre-children* was represented by the sequence 2110(1)-1110(2)-1111(7) (27.0%, n=554). This group is characterized by married individuals, employed with no children, transitioning into home ownership, followed by having children under the age of 5 a few years later. The average age in this cluster is 27.6 years (SD 7.4). Cluster four represents individuals who have never been married and are not currently in a de facto relationship, are employed and do not have children, moving out from their parents' home into a private rental. The representative sequence for this cluster is 5410(8)-2410(2) (17.1%, n=350). This cluster embodies the youngest individuals (mean 19.0 years, SD 5.2) and is described as *parental home leavers to renters, no children*. The fifth cluster, 2110(2)-2111(5)-1111(2) (12.8%, n=263), characterizes individuals that start off as renting a private property, being married, employed and do not have children. These individuals first have children and then transition into home ownership later on and are hence referred to as *traditional home owners, post-pre-school children*. The mean age in this cluster is 31.7 years (SD 8.6).

These results show that multiple pathways are followed along the way to home ownership. The fifth cluster being the smallest (17.1%), represents the traditional pathway of being married and having the first child in a rental property before entering home ownership when children are still of pre-school age. Cluster one is similar, however the individuals do not enter home ownership until the youngest child is of school age. The two pathways identified, different to the traditional pathway, are characterised by individuals who have children after they enter home ownership, and individuals who enter home ownership as a single person.

Table 3. Representative sequences for each cluster, separated for stayers and movers

Stayers (52.8%, n=2295)	Movers (47.2%, n=2050)
Representative sequences for each cluster	
1. 1111-1111-1111-1112-1112-1112-1112-1112-1112-1112 (79.4%, n=1823) 2. 5430-5430-5410-5410-5410-5410-5410-5410-5410-5410 (20.6%, n=472)	1. Late home owners, post-school-aged children 2112-1112-1112-1112-1112-1112-1112-1112-1112-1112 (29.3%, n=601) 2. Single renters to owners, no children 2410-2410-2410-2410-2410-2410-2410-2410-2410-1410 (13.8%, n=282) 3. Home owners, pre-children 2110-1110-1110-1111-1111-1111-1111-1111-1111-1111 (27.0%, n=554) 4. Parental home leavers to renters, no children 5410-5410-5410-5410-5410-5410-5410-5410-2410-2410 (17.1%, n=350) 5. Traditional home owners, post-pre-school children 2110-2110-2111-2111-2111-2111-2111-2111-1111-1111 (12.8%, n=263)

4.4 Transversal state frequency distributions of housing tenure states, marital status, employment status and age of youngest child in the household by cluster of movers

Transversal state frequency plots for every demographic variable within each cluster of movers were produced, to visualize the trends of states across ten waves and to understand the characteristics of each cluster.

For brevity we refer to clusters by the number as defined in Table 3. Figure 1 shows that cluster three and cluster four were associated with the greatest change in the distribution of housing tenure states over ten waves. In cluster three, at wave one, there were 25.1% (n=139) home owners and 46.8% (n=259) renters (private); these percentages reverse over time with 85.9% (n=476) home owners and 8.7% (n=48) renters by wave ten. This group represents individuals who transitioned into home ownership. Cluster four has the greatest proportion of individuals living with their parents at wave one (93.1%; n=326). This number steeply decreased to 10.0% (n=35) by wave ten, with 30.1% (n=105) home owners and 48.7% (n=170) renters (private). Obviously, this cluster represents individuals moving out of the parents' home. The remaining clusters do not show a great change in housing tenure distributions over time, however they differ in their characteristics. Cluster one had consistently high rates of home owners, slightly increasing over time (wave one: 60.1%, n=361; wave ten: 72.1%, n=433). Clusters two and five show similar patterns, with a large and relatively stable proportion of renters (private) (cluster two, wave one: 47.9%, n=135; cluster five, wave one: 43.0%, n=113). Note that both clusters show an increase in renters (private), peaking around the middle of the survey, and again decreasing towards the end of the survey. Complementing this pattern for the same clusters, the proportion of home owners decreases in the first half of the survey, increasing again in the second half of the survey.This indicates that within the first half of the survey, individuals were leaving

home ownership. Cluster five has consistently the highest rates of both renters (social) (wave one: 16.7%, n=44) and other tenure (wave one: 10.7%, n=28).

Further, the clusters were examined by the transversal state frequencies of marital status, shown in Figure 2. In clusters two, three and four, changes in the distribution of marital status can be observed. Cluster two, which also consistently shows the greatest proportion of renters (private) at each time point, shows a decrease in the proportion of individuals who have never been married and were not in a de facto relationship, from 60.3% (n=170) at wave one to 33.7% (n=95) at wave ten. At the same time, the proportion of married individuals increased (wave one: 12.8%, n=36; wave ten: 26.2%, n=74), whereas the proportion of individuals in a de facto relationship or being separated, divorced or widowed remained stable (de facto, wave one: 11.4%, n=32; separated/divorced/widowed, wave one: 15.6%, n=44). Cluster three, which showed a steady increase in the proportion of home owners, also shows a steady increase in married individuals (wave one: 17.2%, n=95; wave ten: 63.5%, n=361). In cluster four, which is associated with individuals leaving their parental house, most individuals have never been married at wave one (98.6%, n=345). By wave ten, 44.6% (n=156) are in a relationship (14.6%, n=51 married; 30.0%, n=105 de facto). Cluster one and five show stable proportions of marital states across time, however cluster one has a higher proportion of individuals being married (wave one: 76.9%, n=462), compared to cluster five (wave one: 54.0%, n=142).

Employment status distributions were also examined by clusters and showed a stable distribution of individuals being employed (around 75-90%), unemployed (around 4-10%) and not in the labour force (around 6-20%) for clusters one two and three, across all waves (Figure 3). Cluster four, relating to individuals leaving the parental house, and forming relationships, additionally show an increase of individuals being employed (wave one: 56.3%, n=197; wave ten: 86.6%, n=303). Cluster five, wich shows a consistently highest proportion of individuals in other tenure or rental (social), also consistently demonstrates the highest rate of individuals not being in the labour force (wave one: 36.9%, n=97; wave ten: 33.8%, n=89).

Next, the distributions of age of youngest child in the household were observed at each time point separately for each cluster (Figure 4). Cluster one, which is characterized by high proportions of home owners and married individuals, shows also a high proportion of individuals with children aged five and below (55.9%, n=336) and individuals with children aged 6-18 years (30.5%, n=183). This proportion was reversed by wave ten (individuals with children aged five and below: 19.3%, n=116; individuals with children aged 6-18 years: 54.6%, n=328). The main increase in individuals with children aged 6-18 years occurs in the first three quarters of the survey and is parallel to the increase in home owners. Cluster three, which reflects individuals entering home ownership and getting married, shows a decrease in the proportion of individuals not having any children (wave one: 94.0%, n=350; wave ten: 47.1%, n=261); and a steep increase in the proportion of individuals with children aged 5 years and under (wave one: 2.9%, n=16; wave ten: 49.3%, n=273). Interestingly, the steep increase in the proportion of home owners (Figure 1) occurs relatively early on and towards the middle of the ten waves, whereas the steep increase of individuals having children aged five years and under, occurred from the middle of the survey towards the end. Clusters two and four consisently show high proportions of individiuals with no children (cluster two, wave one: 78.7%, n=222; cluster four, wave one: 100.0%, n=0). In cluster four, the proportion of individuals with no children slightly decreases to 89.1% (n=312) by wave ten. Cluster five shows a relatively stable proportion of individuals with children aged 5 years and under (wave one: 46.0%, n=121; wave ten: 39.9%, n=569) indicating the birth of children over the ten years.

Figure 1. Transversal state frequencies of tenure type by clusters one to five for movers

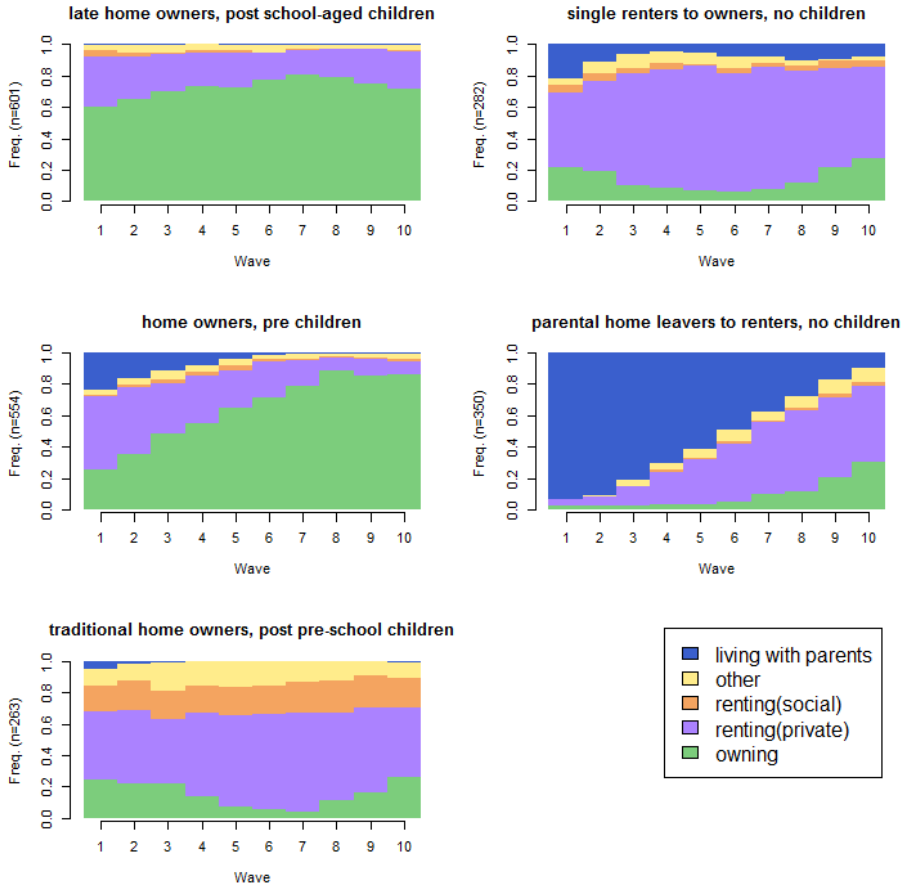


Figure 2. Transversal state frequencies for marital status by clusters one to five for movers

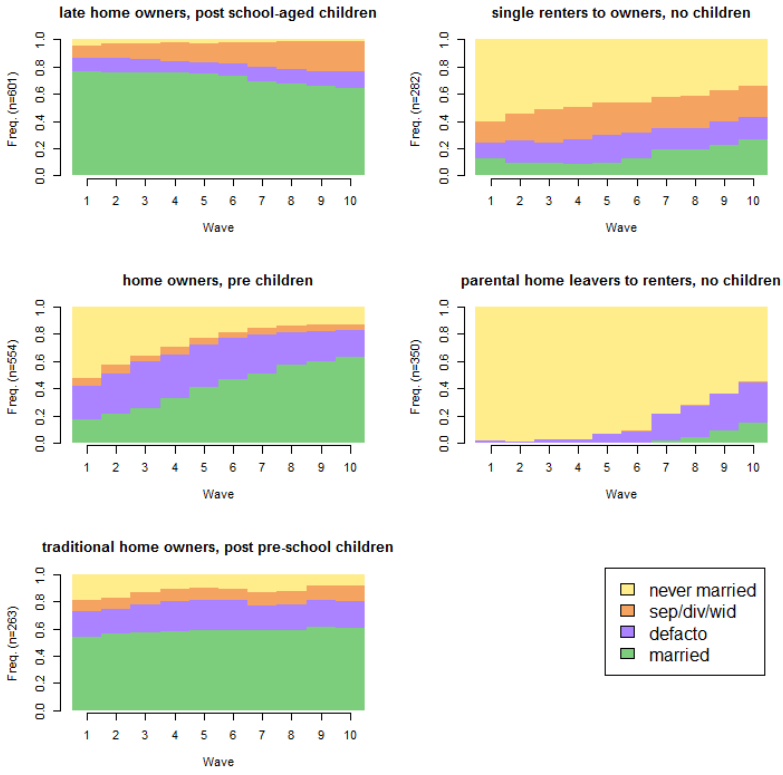


Figure 3. Transversal state frequencies for employment status by clusters one to five for movers

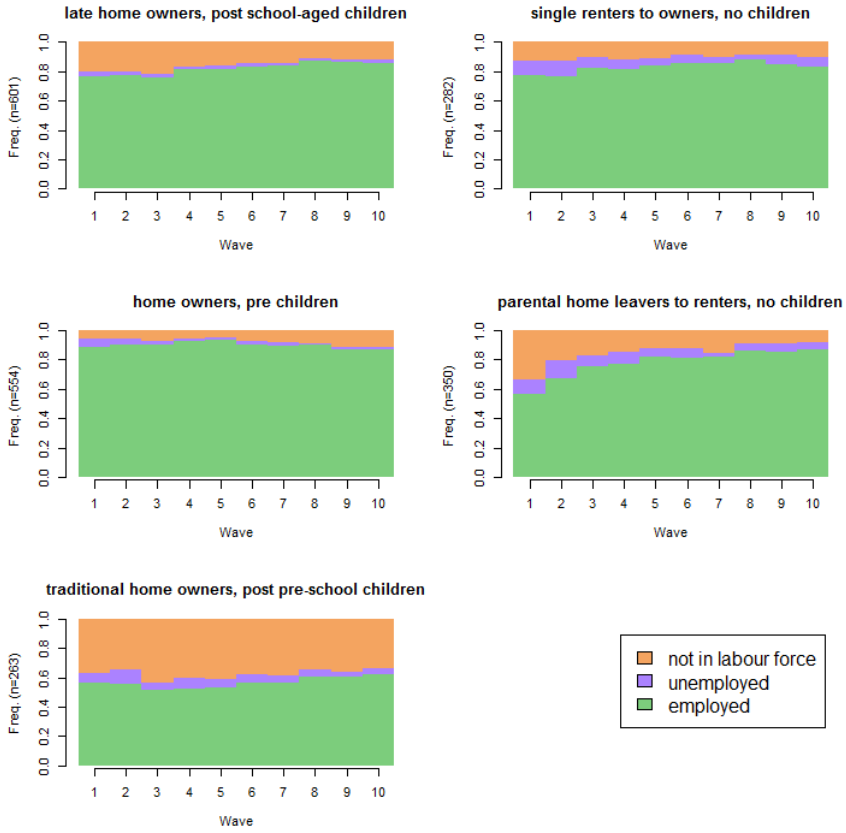
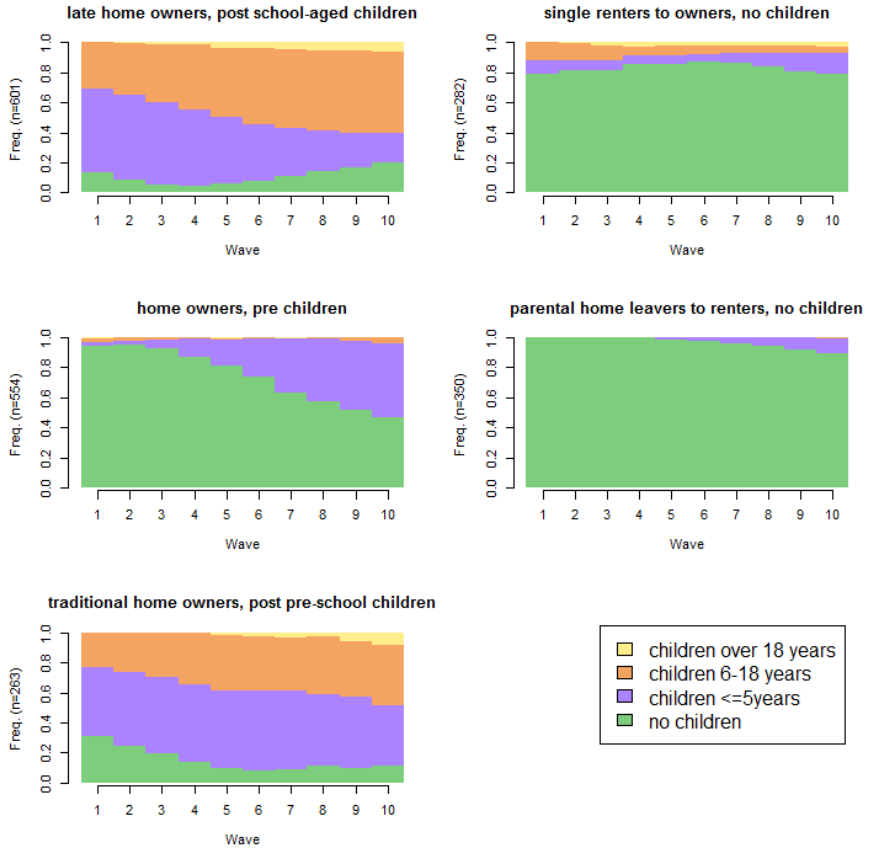


Figure 4. Transversals state frequencies for age group of youngest child by clusters one to five for movers



5. Conclusions

This research set out to answer questions regarding the main housing pathways of adult Australians and the inter-relationships with other life events. The traditional interaction of life events and housing transitions as they were experienced in previous decades, getting married, having a child and then entering home ownership while children were still of pre-school age, have been challenged by life style changes and increasing opportunities to make choices and hence determine one's pathway, as supported by the 'choice' theory, which resulted in different life experiences and pathways. The empirical analysis aimed to identify any evidence for this differentiation by developing a typology of housing pathways and life events for Australian families of childbearing age, with and without children.

For housing tenure pathways in isolation, the analysis revealed that over half of the individuals in the sample (52.8%) did not change housing tenure over ten years of the survey and 41.8% of all sequences were represented by stable home ownership. Although the majority of individuals who did not change housing tenure over time already have transitioned into home ownership (79.2%), it is important not to ignore those remaining individuals, around one fifth, who do not enter home ownership during a ten year period. The most frequent sequences including a tenure change showed transitions into home ownership, hence an 'upwards' transition from other tenure categories. However, even within the group of individuals experiencing a housing tenure change, it needs to be acknowledged that there will be individuals who do not enter home ownership, for example switching between renting (private) and renting (social). These pathways were not discussed in this paper as the analysis did not identify them as major pathways in the typology.

Although previous Australian research (Beer & Faulkner, 2009) indicates that the number of people experiencing a first birth before entering home ownership is decreasing, no other studies support this finding with empirical evidence using longitudinal data. With the availability of ten waves of the HILDA survey, it was possible to examine a window of ten years of housing tenure transitions and life experiences for individuals, acknowledging that a complete housing transition sequence over the life course is three or four times longer than current data allows for. The technique of multi-channel sequence analysis has been utilised to produce a typology of typical pathways of housing transitions, intertwined with other significant life-events identifying five distinct types of pathways.

The representative pathways for each of the five clusters can be summarised as follows (where total *n* is the number of individuals in the sample who experienced a housing tenure transition):

Late home owners, post school-aged children (cluster one, 29.3%, n=601): oldest individuals at wave one (on average mid-thirties), transitioning into home ownership with children aged 6 to 18 years. Most individuals in this cluster were employed and already married. The representative sequence indicates that these individuals transitioned into home ownership when married with school-aged children.

Single renters to owners, no children (cluster two, 13.8%, n=282): aged on average in the late twenties at wave one, mainly renters (private), some transitioning into home ownership, they were starting relationships. The proportion of individuals who were separated, divorced or de facto in this cluster remained relatively constant over the ten waves. The majority was employed and had no children. The representative sequence explains this cluster as individuals who have never been married, with no children, transitioning into home ownership (out of renting (private)).

Home owners, pre children (cluster three, 27.0%, n=554): aged on average in the late twenties at wave one, this cluster incorporates the main transitions into home ownership in the first five years of the survey, as well as the greatest increase in the proportion of individuals getting married overall. These individuals were mainly employed and the cluster demonstrated an increase in the proportion of individuals with children aged five years and under in the second five years of the survey. The representative sequence characterises this cluster as individuals first transitioning into home ownership, and then experiencing the birth of a child. The individuals were already married by the time of the tenure transition.

Parental home leavers to renters, no children (cluster four, 17.1%, n=350): youngest individuals aged late teens to early twenties in wave one, leaving the parents' house and starting relationships in the last five years of the survey. These individuals were also beginning to transition

into the labour force. Most individuals had no children. The representative sequence summarises this cluster as individuals leaving their parents, moving into a private rental property.

Traditional home owners, post pre-school children (cluster five, 12.8%, n=263): aged around thirty years, contains a large proportion of renters (private), but also the largest (compared to other clusters) group of individuals in renting (public) and other tenure.

The proportion of individuals in home ownership is increasing in the last three years of the survey. Around half of the individuals were married, with little change in the distribution of marital status over time. One third of individuals were not in the labour force at any point in time. The main increase in the proportion of individuals with children aged five years and under occurred during the first five years of the survey. Based on the representative sequence for this cluster, the main characteristics of these individuals are being married and employed, and they first had a child and then entered home ownership, which is the traditional pathway.

The main findings demonstrate that for all individuals who experienced a change in tenure in the sample, one group of individuals entered home ownership first, before the arrival of children in the family, while a smaller group of individuals entered home ownership when children were of pre-school age, this being the previous typical traditional pathway. In both scenarios, marriage precedes transition to home ownership and birth of a first child. Note that previously, some individuals would also enter home ownership before their first child was born, but it was not acknowledged as a major housing pathway as it is now. Similarly, findings presented in this paper did not include pathways characterised by adverse housing tenure transitions associated with marital dissolution or unemployment. Although these pathways were indeed present, they were not frequent enough to be defined as a typical pathway in our five clusters, but they did emerge with increasing separation of the clusters. Previous research suggests a disconnectedness of entry into home ownership and fertility events (Badcock & Beer, 2000; Winter & Stone, 1999), however this analysis suggests that the inter-relation of housing pathways, in particular entry into home ownership and marriage and birth, is still present, but the previously ordered sequences of these events have become less clear. It is important to be aware that there is also a significant group of individuals who enter home ownership on their own, without being in a relationship, which is a pathway that was not likely to be followed in previous decades.

This research has methodological strengths in the use of sequence analysis and longitudinal survey data over ten years; however, there are several limitations. First, the research focus is on major life transitions that occurred primarily in early adulthood, and therefore it was necessary to identify and extract a sub-sample of individuals for whom these transitions were observed. Clearly, the selection of the sample has a strong impact on the major pathways emerging from the analysis. The sample was further restricted to individuals with a complete interview pattern. Given that individuals in unstable housing tenure types are more likely to show incomplete interview patterns, housing pathways that do not include home ownership may be under-represented. There is indeed scope to explore a greater range of pathways, by selecting more clusters to identify other important but less frequently occurring pathways. Second, the availability of ten waves of the HILDA survey data made it possible to analyse a window of housing pathways in Australia; however, identifying an individual's housing tenure in the HILDA survey is not straightforward, as this measure was captured on a household rather than an individual level. A set of rules and assumptions were developed based on relationship statuses within the household. Finally, the timing of some of the transitions is linked to the survey waves, rather than to a date. This leads to assumptions that marriage and entering home ownership, for example, occurred at the same time, although there could have been a gap of up to twelve months between the transitions. The impact of this on the current findings is unclear, but we acknowledge that the exact timing of events is important when the order of events is of interest.

The housing pathways in Australia are undergoing change, and particularly entry into home ownership is of great concern considering the risk of poverty in retirement for families and individuals who did not enter home ownership. More in-depth research is needed to further understand the relationships among the trigger life events, in particular union formation and dissolution, and birth of the first and any successive child, and whether these life events occur within

five years of the transition to home ownership. This will be particularly important for future analysis of home ownership transitions that also examines relationships with health and well-being, as well as income and wealth related outcomes based on previous life experiences. Data over a longer period of time are required to investigate timing of life events within five years of transitions into home ownership. It is promising that the HILDA survey has been extended to continue data collection over sixteen waves allowing extensions to this research.

Multi-channel sequence analysis is an exploratory technique, which provided information on the order of several processes occurring in early and mid-aged adulthood that are defining major pathways in housing tenure. Future research will use this information to model these processes simultaneously in a multilevel multi-process framework.

Acknowledgements

This paper uses unit record data from the Household, Income and Labour Dynamics in Australia (HILDA) Survey. The HILDA Project was initiated and is funded by the Australian Government Department of Social Services (DSS) and is managed by the Melbourne Institute of Applied Economic and Social Research (Melbourne Institute). The findings and views reported in this paper, however, are those of the authors and should not be attributed to either DSS or the Melbourne Institute.

Appendix

Examining the 'top-ten' sequences for housing tenure status, marital status, employment status and age of youngest own child in the household for the entire sample of families with children or of childbearing age.

For each of the four variables of interest, the sequences were firstly examined separately, starting with the sequences for housing tenure status. For housing pathways over ten waves of data with five possible tenure states, and given that all tenure transitions are possible between waves, there are 5^{10} = 9,765,625 possible unique sequences, with the five housing tenure states being: owning, renting (private), renting (social), other, and living with parents. Examining the sequences of housing tenure sequences for the 4,345 individuals in the analytic sample across ten waves of HILDA data, showed that there are 876 unique sequences, with the most frequent sequence being 'owning the home' for all ten waves. The stable home ownership sequence explained 41.8% (n=1,818) of all housing tenure experiences. Other sequences for which housing tenure did not change include renting their homes from a private landlord (7.2%, n=309), living with parents (2.5%, n=108) and social tenure (1.3%, n=55). More than half of the individuals (52.8%) did not change their tenure status over the period of ten waves. The remaining 'top ten' sequences start with one, two, three, four, six or eight waves of renting their home in the private sector and then transition into home ownership for the remaining waves (6.3%, n=270). Furthermore, 'owning' as the tenure state was the most frequent state at each time point, consistently increasing from 56% at wave one to 69% at wave ten. This trend can be explained by higher rates of home ownership with older age (Yates, 2007). A higher percentage of home owners in the sample at the end of the survey in 2010, compared to the beginning of the survey in 2001, suggests that individuals were transitioning into home ownership sometime throughout these ten years.

Focussing now on sequences of marital status across ten waves, there were 492 unique sequences explaining marital status transitions. The four most frequent sequences correspond to a consistent marital status throughout the ten waves, with 43.7% (n=1897) being married, 11.5% (n=499) have never been married and are not in a de facto relationship, 3.9% (n=171) being separated, divorced or widowed and 3.4% (n=148) are in a de facto relationship for all ten waves. The remaining six most frequent sequences start with being in a de facto relationship for one, two or four waves and then entering marriage (3.2%, n=134), being single for eight or nine waves and then transitioning into a de facto relationship (1.75%, n=76), and getting divorced between waves nine and ten (0.8%, n=36). The ten most frequent sequences for marital status explain 68.2% of all possible sequences for marital status.

Summaries for employment status showed 712 unique sequences. Being employed consistently was the predominant sequence (54.5%, n=2366). This was followed by not being in the labour force for ten waves (3.6%, n=155). The remaining eight most frequent

sequences can be explained as follows: 3.1% (n=134) of individuals were not in the labour force for one or two waves and then transitioned to being employed, 1.1% (n=47) were employed for nine waves, transitioning out of the labour force, 2.8% (n=121) were employed in the first wave followed by 1-3 waves of not being in the labour force and then taking up employment again. Finally, 1.0% (n=45) were unemployed in the first wave and employed in the last nine waves and 0.7% (n=31) were employed in the first wave, unemployed in the second wave and employed for the last eight waves. The sequences for employment status show more variability amongst the ten most frequent sequences compared to the sequences of other statuses. The ten most frequent sequences for employment status explain 66.8% of all possible sequences.

The sequences relating to age of youngest child in the household demonstrate the least number of unique sequences (312). Of all individuals in the sample 26.8% (n=1166) did not have children, 10.4% (n=451) had a youngest child aged 6-18 years and 3.2% (n=138) had a youngest child under the age of five throughout all ten waves. The remaining seven sequences within the 'top ten' account for 20% (n=866) and are characterised by individuals who had children who were growing up, hence these sequences start with individuals who had children under the age of 5 for varying numbers of waves, transitioning to having children aged 6-18 years old. The ten most frequent sequences explain 57.2% of the sequences related to age of youngest child in the household.

Transversal tenure state distribution plots

A useful way of examining sequences is by visualising the distribution of the state, in this case housing tenure status, at each wave. These plots are referred to as transversal state distribution plots (Gabadinho et al., 2011). Housing tenure status distributions are plotted by age group of the individual at wave one, marital status, employment status and the age of youngest child in the household. The transversal housing tenure states by age group in Figure A5 showed that the group corresponding to the largest percentage of individuals living with parents at wave one (59.9%) was in the age category of 25 years or less at wave 1. This percentage consistently decreased across the time span of ten waves to 12.9% at wave 10. As expected, this is also the group with the lowest proportion of home owners compared to all other age groups (wave 1: 10.6%; wave 10: 41.1%). The group aged 30-35 years at wave 1 continued to move into home ownership (wave 1: 42.5%; wave 10: 65.6%) and move out of the parental home (wave 1: 9.8%; wave 10: 2.5%) over the ten year period. Individuals renting their homes are equally represented at each time point for this age group (wave 1: 24.9%; wave 10: 26.9%). For the age groups 30 years and over, home ownership is the dominant tenure state at each wave, slowly increasing, but not as steeply as for the younger age groups (wave 1: 62.0%; wave 10: 71.8%).

Figure A6 shows transversal housing tenure states by marital status at wave one. Individuals legally married at wave one were dominantly home owners, with 81.2% owning their homes. This percentage was stable throughout the ten waves. On the contrary, home owners were only represented by 15.5% of individuals who were never married and not in a de facto relationship at wave one. The dominant housing tenure for this marital status at wave one was living with parents (52.2%). By wave ten, this trend is reversed; with only 13.0% of individuals living with their parents and 44.4% being home owners. Individuals who were in a de facto relationship or separated/divorced/widowed at wave one had a relatively stable proportion of approximately 50% in home ownership at each wave, and a 30%-40% of individuals renting in the private sector. The group of individuals that were separated, divorced or widowed at wave one were consistently the highest proportion of individuals renting in the public sector (wave 1: 9.9%; wave 10: 9.6%).

Housing tenure pathways grouped by the individuals' employment status at wave one showed clear differences in the state distributions for individuals employed, unemployed or not in the labour force at wave one. For individuals employed at wave one, the proportion of home owners increased from 61.4% at wave one to 74.3% at wave 10. A proportion of 23.2% and 44.8% of individuals unemployed or not in the labour force at wave one, respectively, were home owners. This percentage increased by roughly 10% in both groups by wave ten. The group of individuals who were unemployed at wave one show consistently the largest proportion of individuals renting in the private sector (wave 1: 35.0%; wave 10: 41.4%) and a consistent proportion of 8% renting in the public sector (Figure A7).

Figure A8 shows that 31.9% of individuals with no children at wave one were in home ownership; this proportion increased to 56.6% at wave ten. The proportion of individuals renting in the private sector stayed stable at around 30% and the proportion of individuals living with their parents decreased from

32.8% at wave 1 to 8.5% at wave ten for individuals with no children at wave one. Individuals with children aged five and under and with children aged 6-18 years had a similar and stable tenure state distribution across all ten waves: at wave one 75.2% and 81.6% are home owners, 18.8% and 14.0% are renters (private), 3.5% and 2.6% are renters (social), 2.0% and 1.3% are in a another tenure, and 0.5% living with parents, for individuals with children aged five and under and for individuals with children aged 6-18 years respectively. Individuals with children older than 18 years are only represented by 6 individuals at wave one, however, at wave ten there are 281 individuals who have adult children in the household and the majority are home owners (84%).

In summary, almost half of the housing tenure sequences (48.1%) are home owners already and have been for the whole period from 2001 to 2010, or are transitioning sometime throughout this period into home ownership. Examining the transversal state frequencies of tenure status by various demographic characteristics shows distinctive changes in the frequencies of tenure status over time, particularly for individuals who are under the age of 30 at wave one, have never been married and are not in a de facto relationship, are either unemployed or not in the labour force and have no own children in the household.

Figure A5. Transversal state frequencies of tenure status by age group at Wave 1

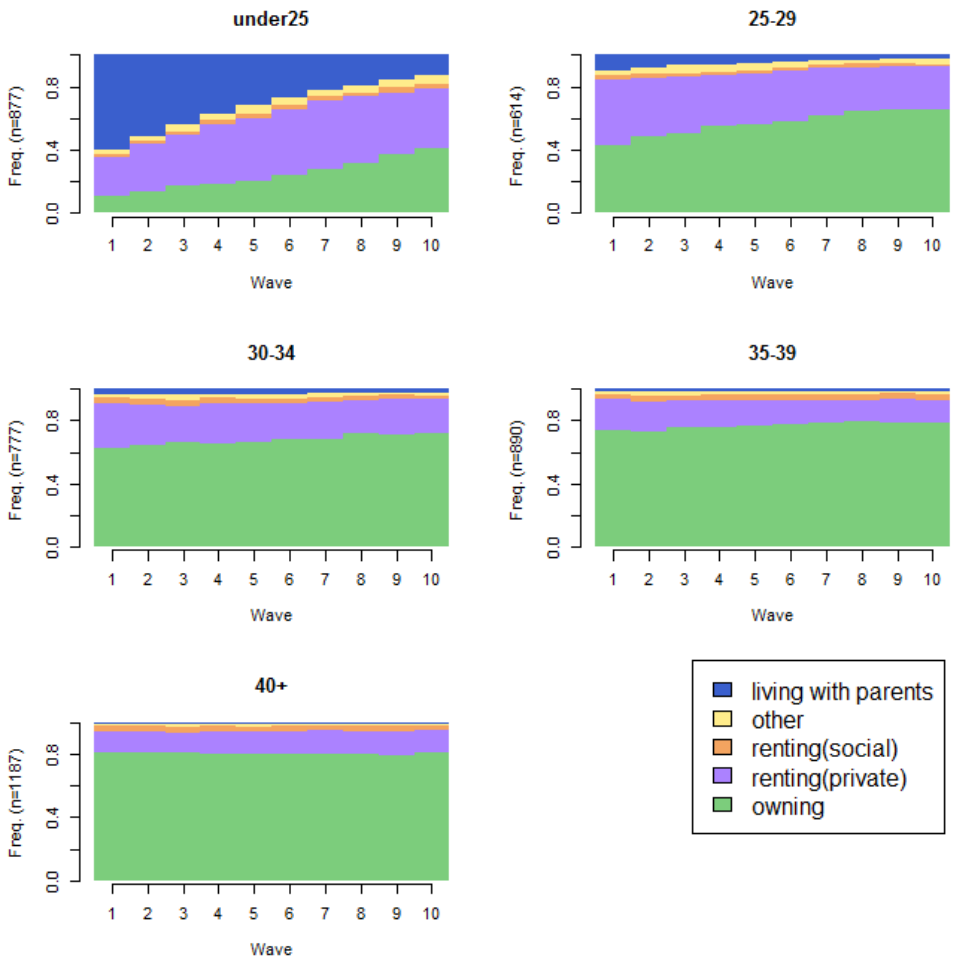


Figure A6. Transversal state frequencies of tenure status by marital status at Wave 1.

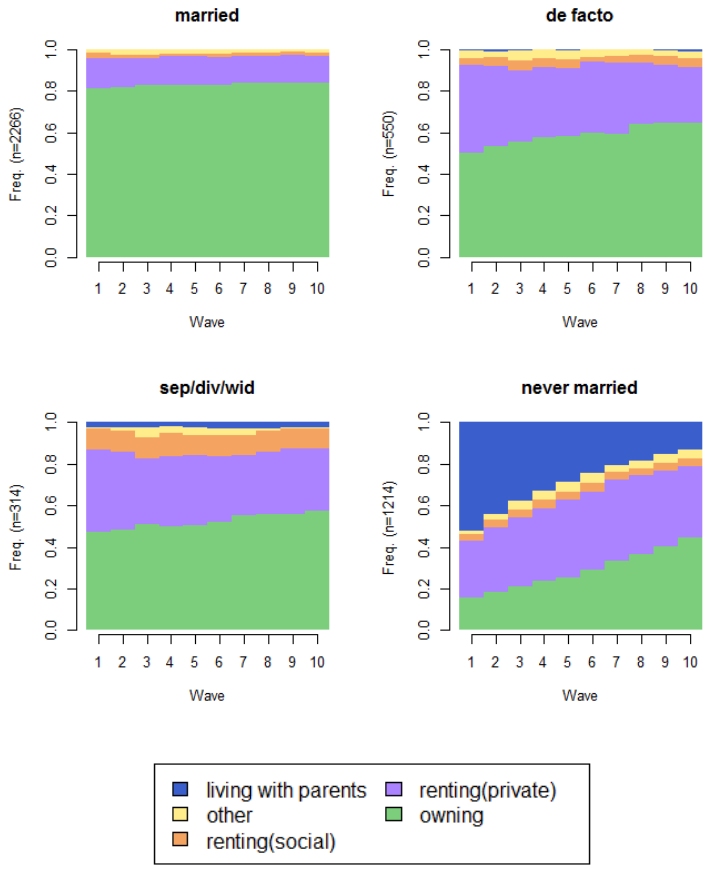


Figure A7. Transversal state frequencies of tenure status by employment status at Wave 1.

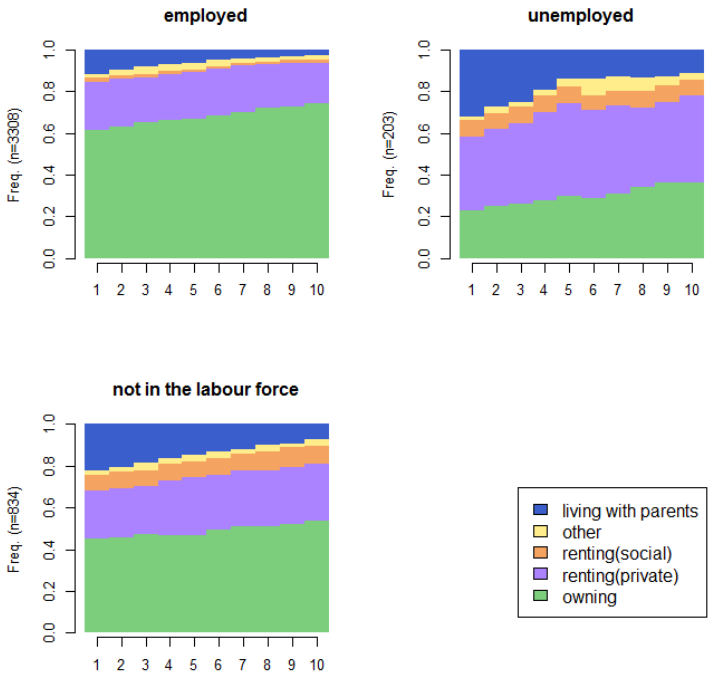
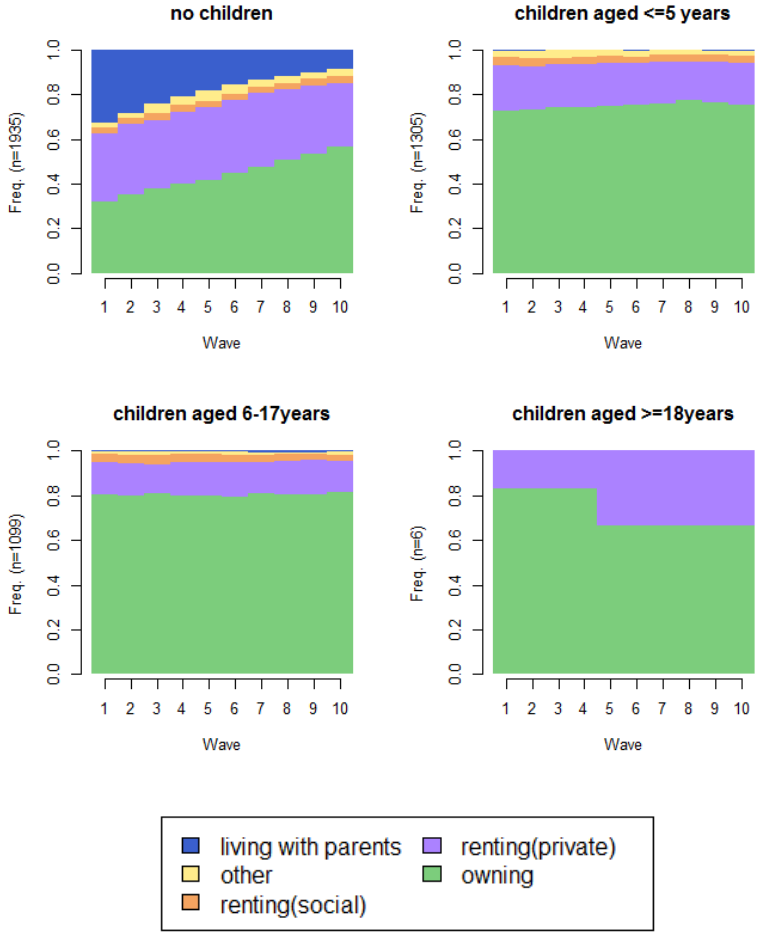


Figure A8. Transversal state frequencies of tenure status by age of youngest child at Wave 1.



References

Abbott, A., & Tsay, A. (2000). Sequence analysis and optimal matching methods in sociology - Review and prospect. *Sociological Methods & Research, 29*, 3-33. http://dx.doi.org/10.1177/0049124100029001001

Allison, P. (2009). Sequence Analysis and Optimal Matching Gechniques for Social Science Data. In A. H. Bryman, Melissa A. (Ed.), *Handbook of Data Analysis*. London, UK: Sage Publications Ltd.

Badcock, B., & Beer, A. (2000). *Home Truths*. Melbourne: Melbourne University Press.

Baizan, P., Aassve, A., & Billari, F. C. (2004). The interrelations between cohabitation, marriage and first birth in Germany and Sweden. *Population and Environment, 25*, 531-561. http://dx.doi.org/10.1023/B:POEN.0000039064.65655.3b

Beer, A., & Faulkner, D. (2009). *21st century housing careers and Australia's housing future*. Melbourne: Australian Housing and Urban Research Institute.

Beer, A., Paris, C., Faulkner, D., & Clower, T. (2011). *Housing Transitions through the life course*. Bristol: The Policy Press.

Boyle, P. J., Kulu, H., Cooke, T., Gayle, V., & Mulder, C. H. (2008). Moving and union dissolution. *Demography, 45*, 209-222. http://dx.doi.org/10.1353/dem.2008.0000

Clapham, D. (2005). *The meaning of housing - A pathwyays approach*. Bristol: The Policy Press. http://dx.doi.org/10.1332/policypress/9781861346384.001.0001

Clark, W. A. V., Deurloo, M. C., & Dieleman, F. M. (2003). Housing Careers in the United States, 1968-93: Modelling the Sequencing of Housing States. *Urban Studies, 40*, 143-160. http://dx.doi.org/10.1080/00420980220080211

Clark, W. A. V., & Huang, Y. (2003). The life course and residential mobility in British housing markets. *Environment and Planning A, 35*, 323-339. http://dx.doi.org/10.1068/a3542

Elder, G. H., Jr. (1978). Approaches to social change and the family. *American Journal of Sociology, 84*, S1-S38. http://dx.doi.org/10.1086/649235
Elder, G. H., Jr. (1985). *Life course dynamics: trajectories and transitions, 1968-1980*. Ithaca, NY: Cornell University Press.
Elder, G. H., Jr. (2003). The Emergence and Development of Life Course Theory. In J. T. Mortimer & M. J. Shanahan (Eds.), *Handbook of the Life Course* (pp. 3-19). New York: Kluwer Academic/Plenum Publishers. http://dx.doi.org/10.1007/978-0-306-48247-2_1
Feijten, P., & Mulder, C. H. (2002). The Timing of Household Events and Housing Events in the Netherlands - A longitudinal Perspective. *Housing Studies, 17*, 773-792. http://dx.doi.org/10.1080/0267303022000009808
Gabadinho, A., Ritschard, G., Muller, N. S., & Studer, M. (2011). Analyzing and Visualizing State Sequences in R with TraMineR. *Journal of Statistical Software, 40*, 1-37.
Gauthier, J.-A., Widmer, E. D., Bucher, P., & Notredame, C. (2010). Multichannel sequence analysis applied to Social Science data. *Sociological Methodology, 40*, 1-38. http://dx.doi.org/10.1111/j.1467-9531.2010.01227.x
George, L. K. (1993). Sociological Perspectives on Life Transition. *Annual Review of Sociology, 19*, 353-373. http://dx.doi.org/10.1146/annurev.so.19.080193.002033
Giddens, A. (1991). *Modernity and self identity: Self and society in the late modern age*. Cambridge: Polity Press.
Ginsburg, C., Steele, F., Richter, L. M., & Norris, S. A. (2010). Modelling Residential Mobility: Factors Associated with the Movement of Children in Greater Johannesburg, South Africa. *Population, Space and Place, 17*, 611-626.
Harley, C., & Mortimer, J. T. (2000). *Social status and mental health in young adulthood: The mediating role of the transition to adulthood*. Paper presented at the Biennial Meeting of the Society for Research on Adolescence, Chicago, March 30–April 2.
Hogan, D. P., & Astone, N. M. (1986). The Transition to Adulthood. *Annual Review of Sociology, 12*, 109-130. http://dx.doi.org/10.1146/annurev.so.12.080186.000545
Hunt, S. (2005). *The Life Course: A Sociological Introduction*. Gordonsville: Palgrave Macmillan.
Kaufmann, L., & Rousseeuw, P. J. (2005). *Finding Groups in Data*. Hoboken: John Wiley & Sons.
Kendig, F. (1982). Will a Home Still Be a House. *Institutional Investor, 16*, 89-91.
Kendig, H. (1981). *Buying and Renting: Household Moves in Adelaide.* Canberra: Australian Institute of Urban Studies, Canberra.
Kendig, H. L. (1984). Housing Careers, Life-Cycle and Residential-Mobility - Implications for the Housing-Market. *Urban Studies, 21*, 271-283. http://dx.doi.org/10.1080/00420988420080541
Kulu, H. (2005). Migration and fertility: Competing hypotheses re-examined. *European Journal of Population-Revue Europeenne De Demographie, 21*, 51-87. http://dx.doi.org/10.1007/s10680-005-3581-8
Kulu, H. (2008). Fertility and spatial mobility in the life course: evidence from Austria. *Environment and Planning A, 40*, 632-652. http://dx.doi.org/10.1068/a3914
Kulu, H., & Milewski, N. (2007). Family change and migration in the life course: An introduction. *Demographic Research, 17*, 567-590. http://dx.doi.org/10.4054/DemRes.2007.17.19
Martin, P., & Wiggins, R. D. (2011). Optimal Matching Analysis. In M. Williams & P. W. Vogt (Eds.), *The SAGE Handbook of Innovation in Social Research Methods* (pp. 385-408). London: SAGE Publications Ltd. http://dx.doi.org/10.4135/9781446268261.n22
McDonald, P., & Merlo, R. (2002). *Housing and its association with other life outcomes*. Melbourne: Australian Housing and Urban Research Institute.
McLeod, P. B., & Ellis, J. R. (1982). Housing Consumption Over the Family Life Cycle: an Empirical Analysis. *Urban Studies, 19*, 177-185. http://dx.doi.org/10.1080/00420988220080301
Michielin, F., & Mulder, C. H. (2008). Family events and the residential mobility of couples. *Environment and Planning A., 40*, 2770-2790. http://dx.doi.org/10.1068/a39374
Mulder, C. H. (2006). Home-ownership and family formation. *Journal of Housing and the Built Environment, 21*, 281-298. http://dx.doi.org/10.1007/s10901-006-9050-9
Mulder, C. H., & Lauster, N. T. (2010). Housing and Family: An Introduction. *Housing Studies, 25*, 433-440. http://dx.doi.org/10.1080/02673031003771109
Neugarten, B. L., & Datan, N. (1973). Sociological perspecitves on the life cycle. In P.B. Baltes & K.W. Scheie (Eds.)*, Life-span developmental psychology: Personality and socialization,* (pp. 53-69)*.* New York: Academic Press. http://dx.doi.org/10.1016/B978-0-12-077150-9.50009-5
Payne, J., & Payne, G. (1977). Housing pathways and stratification: a sudy of life changes in the housing market. *Journal of Social Policy, 23*, 125-156.
Pollock, G. (2007). Holistic trajectories: a study of combined employment, housing and family careers by using multiple-sequence analysis. *Journal of the Royal Statistical Society Series a-Statistics in Society, 170*, 167-183. http://dx.doi.org/10.1111/j.1467-985X.2006.00450.x
R Core Team (2013). R: A Language and Environment for Statistical Computing. R Foundation for Statistical Computing, Vienna, Austria.

Rossi, P. H. (1955). *Why families move*. Glencoe, Illiinois: The Free Press.
Stovel, K., & Boland, M. (2004). Residential Trajectories: Using Optimal Alignment to Reveal the Structure of Residential Mobility. *Sociological Methods & Research, 32*, 559-598. http://dx.doi.org/10.1177/0049124103262683
Studer, M., Ritschard, G., Gabadinho, A., & Mueller, N. S. (2011). Discrepancy Analysis of State Sequences. *Sociological Methods and Research, 40*, 471-510. http://dx.doi.org/10.1177/0049124111415372
Winter, I., & Stone, W. (1999). Home Ownership: Off Course? In J. Yates & M. Wulff (Eds.), *Australia's Housing Choices* (pp. 43-52). Brisbane: The University of Queensland Press.
Wooden, M., & Watson, N. (2001). *The Household, Income and Labour Dynamics in Australia (HILDA) Survey: An Introduction to the Proposed Survey Design and Plan*. Melbourne: The University of Melbourne, Department of Family and Community Services.
Yates, J. (2007). *Has the great Australian dream ended?* Paper presented at the Centre for Public Policy Conference 21-22 February, Jasper Hotel, 489 Elizabeth Street, Melbourne.
Yates, J. (2008). Australia's housing affordability crisis. *The Australian Economic Review, 41*, 200-214. http://dx.doi.org/10.1111/j.1467-8462.2008.00502.x
Yates, J., & Bradbury, B. (2010). Home ownership as a (crumbling) fourth pillar of social insurance in Australia. *Journal of Housing and the Built Environment, 25*, 193-211. http://dx.doi.org/10.1007/s10901-010-9187-4

Childhood evacuation during World War II and subsequent cognitive ability: the Scottish Mental survey 1947

Catherine M Calvin
ccalvin@staffmail.ed.ac.uk
Jeremy A Crang
Lindsay Paterson
Ian J Deary
University of Edinburgh, UK

(Received March 2013 Revised November 2013) http://dx.doi.org/10.14301/llcs.v5i2.255

Abstract

Childhood evacuation during World War II was reported by a recent Finnish study to be associated with lower intelligence at follow-up into early and late adulthood (Pesonen et al., 2011, 2013). Opportunities of conducting such natural experiment studies are rare, and yet they contribute to understanding impacts of the early life environment on cognitive development and ability. We investigated the association between evacuation and later cognitive ability in a different national sample. This included 6,082 pre-school boys and girls, 768 of whom were evacuated from their homes in Scotland between 1939 and 1945. The mean duration of evacuation was 14.8 months (SD = 17.8, Mdn = 7.0). Cognitive ability was measured at age 11, in 1947, using the Moray House Test (No. 12). Evacuated children scored on average 1.5 points higher on intelligence test scores relative to their non-evacuated peers (Cohen's d = 0.10, p = .038). The p value was .070 after controlling for potential confounders, including socio-economic status. These findings, in contrast with those from Finland, raise the possibility that evacuation in Scotland may have had a small positive effect on children's cognitive ability scores, due to a difference in educational and environmental exposures. However, analysis of a subset of results using sibling intelligence data, could not rule out selection bias, potentially caused by higher intellectual-ability parents' being more likely to volunteer their children for evacuation. Nevertheless, any supposed adverse effect of evacuation on children in Scotland was not reflected in subsequent intellectual performance

Keywords: cognitive ability, evacuation, intelligence, IQ, Scottish Mental Surveys, socio-economic status, World War II

'The bomber will always get through'
Stanley Baldwin, speech in the House of Commons, 10 November 1932

Introduction

Cognitive ability, or intelligence, is an important developmental trait, increasing in performance level throughout childhood, and individual differences show quite high stability from adolescence to old age (Deary, Whalley, Lemmon, Crawford, & Starr, 2000; Gow et al., 2011). The population variance in intelligence, as measured by psychometric cognitive tests, is known to have both genetic and environmental causes (Deary, Johnson, & Houlihan, 2009). However, in early childhood, when cognitive development is rapidly increasing, the greater of these influences is the environment. This is strongly evidenced by studies of twins in which the genetic influence on a trait can be

measured alongside shared and unique environmental effects. In early childhood, the shared environment (e.g. that which is common to both members of a twin pair) explains around 50% to 70% of variance in intelligence test scores, whereas genetic effects (or heritability) explain around 25% (Bartels, Rietveld, Van Baal, & Boomsma, 2002; Davis, Haworth, & Plomin, 2009). In later childhood, the role of the shared environment diminishes, as heritability becomes more prominent in explaining population intelligence differences (Deary, Johnson, & Houlihan, 2009; Haworth et al., 2010). It is the early childhood period, therefore, that provides the most fertile period for studying how cognitive ability might be influenced, favourably or unfavourably, by a child's social and physical environment, and the significant events that he or she encounters during that narrow time frame. These dynamic effects may influence behavioural and/or biological systems (including gene expression; see Johnson, 2010) to shape intellectual performance. Identifying the environmental factors that act on developmental processes to affect intelligence is of interest in suggesting early life interventions, or preventative strategies, aimed at optimising cognitive and learning outcomes.

The early environment and cognitive development

Social deprivation, or socio-economic status, has been identified as a potent environmental factor related to neuro-developmental processes and subsequent intelligence (Hackman & Farah, 2009; Lawlor et al., 2005). The specific targeting of the learning disadvantages of low income groups has been the subject of an extensive research literature, in which studies have manipulated early life psycho-social exposures, including cognitive stimulation, with the aim of enhancing cognitive development (Hackman, Farah, & Meaney, 2010; Walker et al., 2011). Evidence from meta-analyses of these early education intervention studies, frequently involving socio-economically-disadvantaged pre-school children, show statistically significant aggregate effect sizes for higher average cognitive ability among children in early life intervention programmes, versus controls (Camilli, Vargas, Ryan, & Barnett, 2010; Gorey, 2001). Although one of the longest-running intervention studies – the U.S. Government's Head Start programme of educational, health, and social service support interventions – has reported that with longer-term follow-up, the effects on cognition fade with time (Barnett & Hustedt, 2005), a more time-intensive intervention to promote cognitive stimulation, the Carolina Abecedarian Project, has revealed longer-lasting IQ gains. In this randomised prospective trial, 104 pre-school children assigned to a five-year intervention or control group from early infancy were followed up to age 21 years, with assessments of intelligence and academic skills (Campbell, Ramey, Pungello, Sparling, & Miller-Johnson, 2002). Those who experienced the early life intervention scored an average of 0.5 of a *SD* higher than controls on the Wechsler Adult Intelligence Scale-Revised at follow-up. However, this strong and lasting intervention effect has not yet been reported elsewhere.

One problem with generalising from the literature on early education interventions is that studies predominantly based on these highly selected groups do not tell us about the full range of possible environmental influences on cognitive development and the effects on individuals across the socio-economic strata. Natural experiment-type studies can provide important observational evidence for potential impacts of early life events on cognitive development and ability across a population. These can be based upon events which some individuals experience, while others do not, and where there are no strong social-selection effects.

Early adverse events and later cognitive abilities

Opportunities to investigate the impact of early life events on intelligence outcomes within a natural experimental context, and utilising a general population sample, are rare. Yet some research has been conducted into the effects of such events during World War II on subsequent cognitive performance. Records relating to the Dutch famine of 1944-45, caused by a food supply blockage to Western urban areas of the Netherlands, for example, provided the opportunity for a series of studies that tested the outcomes of *in utero* nutritional deficiency on a regional population group (Roseboom, Painter, van Abeelen, Veenendaal, & de Rooij, 2011). An early study of this cohort found that mean intelligence test performance in early adulthood was unrelated to the very low calorie intake (400 to 800 per day) of mothers during pregnancy when compared to other

mothers who had been unaffected by the famine (Stein, Susser, Saenger, & Morolla, 1975). However, a more recent study with longer follow-up of the cohort, demonstrated detrimental cognitive effects of the famine by older age (De Rooij, Wouters, Yonker, Painter, & Roseboom, 2010); thus there was a link between poor *in utero* nutrition and cognitive ageing, but not mean cognitive test performance.

Another wartime event which provided the opportunity for investigating a natural experiment-type intervention on cognitive outcome is childhood evacuation. A recent study reported on 2,725 young Finnish men who served in the country's Defence Forces after the war, and who completed general cognitive ability tests on entry when they were approximately 20 years of age. The authors found that those who had been evacuated during the conflict as children (12% of the sample and mainly to foster families in Denmark and Sweden) had significantly lower IQ test scores than their peers who had not been evacuated (Pesonen et al., 2011). The difference was equivalent to 0.2 *SD* units, although the effects were more pronounced for those evacuated between the ages of 2 and 4 years, and more so on a test of verbal ability. Within this age group, the difference in the verbal ability subtest score was equivalent to 0.4 of a *SD*. A much longer follow-up study of this Finnish cohort, to age 70, revealed the same effects: a lower performance on the same cognitive tests with a magnitude of one third of a standard deviation (Pesonen et al., 2013). Again, the strongest effect was in verbal reasoning. This latest study provides one of the lengthiest follow-ups of an intervention affecting cognitive ability, far exceeding the time periods so far reported from controlled educational intervention studies, and suggests the potent effects of early life evacuation on cognition throughout a life time.

The Finnish study's findings relate to those from quasi-experimental design studies of early life stressors in childhood and subsequent cognitive ability. For example, adverse childhood pre-adoption circumstances, as well as post-traumatic stress disorder, have been linked to lower cognitive performance at follow-up, particularly of verbal components, relative to matched controls (Odenstad et al., 2008; Saig, Yasik, Oberfield, Halamandaris, & Bremner, 2006; Yasik, Saigh, Oberfield, & Halamandaris, 2007). The study of evacuated children, however, may provide one of the most population-representative of samples, given evacuation affected families across the entire social strata of society (Lloyd, 1979) and across a wide range of cognitive abilities (Boyd, 1944). Furthermore, although the sample is not entirely self-selected if we allow for indirect self-selection via parental choices – and this is taken into account in our analysis – it may nevertheless provide one of the least self-selected samples in this field.

In the present study we largely replicate the methods of the Finnish study, using a similarly-aged cohort of evacuees and non-evacuees, but using a representative sample from Scotland. We examine the association between evacuation and general intelligence as measured in later childhood. As in Finland, the wartime evacuation of Scottish children was organised by the government, but was non-obligatory. It is therefore necessary firstly to describe the Scottish evacuation process in order to understand how the children became evacuees and the potential for heterogeneity between groups when comparing evacuated and non-evacuated children.

Wartime evacuation in Scotland

During the late 1930s the British government made preparations for the evacuation of the civilian population from areas considered to be the principal industrial and military targets for German bombers in the event of war. Under the official evacuation scheme drawn up for Scotland, the classes of persons for whom evacuation arrangements were made included children of pre-school age and their mothers, children of school-age and their teachers, and expectant mothers. Various districts of Scotland were classified as 'sending areas' (mainly urban areas regarded as being especially vulnerable to attack and with an average population density of 14,000 per square mile) and others as 'receiving areas' (more rural areas considered to be relatively safe and with an average density of 100 per square mile) (Boyd, 1944, pp. 1-5; Stewart & Welshman, 2006, pp. 104-106).

On the commencement of hostilities in September 1939, the evacuation scheme was put into operation in Scotland. It is estimated that some 175,000 people were evacuated during that month. This figure included 62,000 unaccompanied children, 99,000 mothers and accompanied children, 13,000 teachers and 'helpers', and 1,000

'other adults' (Titmuss, 1950, p. 562). Furthermore, families were free to make their own private, unofficial arrangements for evacuation – perhaps staying with relatives or friends who lived in safer areas of Scotland – and a considerable number of mothers and children moved out of the target areas having made their own plans (Boyd, 1944). Nevertheless, the number of evacuees was fewer than those anticipated. In Edinburgh, for example, just 32,000 people, equating to one third of the eligible evacuees, departed from the city (Boyd, 1944). Moreover, during the subsequent weeks and months, with little bombing of Scotland during the so-called 'phoney war', many evacuees drifted back to the sending areas. By January 1940 the number of official evacuees across Scotland had fallen to 50,000 (Titmuss, 1950).

In the spring of 1941 the west of Scotland was heavily blitzed. On the clear moonlit nights of 13-14 and 14-15 March the Luftwaffe mounted devastating attacks on Glasgow and Clydeside. Over 1,200 people were killed in these raids and very many houses damaged or destroyed (Crang, 2012). In the wake of the bombing, a further wave of evacuation took place. In September 1941 it was estimated that the number of evacuees across Scotland had risen to 142,000. They included 27,000 unaccompanied children, 85,000 mothers and accompanied children, 1,000 teachers and 'helpers', and 30,000 'other adults' (Titmuss, 1950, p. 562). Yet, with the attention of the Germans now increasingly on the war against the Soviet Union, and the bombing relenting, many drifted back home once again. By September 1942 there were 55,000 evacuees in Scotland. Thereafter, the number steadily declined so that by March 1945 there were just over 16,000 evacuees (about 11,000 of whom were in fact from English areas but billeted in Scotland) north of the England-Scotland border (Titmuss, 1950).

The dispersal of mothers and children from the large industrial towns and cities of Scotland to the more thinly populated, rural and suburban areas of the country was a massive civic experiment, that incorporated many social and cultural complexities. There were, for example, problems over dialects, with evacuees from Glasgow and the west of Scotland having trouble in being understood in certain regions (Boyd, 1944). There were difficulties in re-locating town dwellers to isolated country districts where they were deprived of their urban social amenities and, as one woman evacuee grumbled, 'there's too much grass about' (Boyd, 1944, p. 71). There were tensions arising from the billeting of Roman Catholics in heavily Protestant areas. And there were antagonisms resulting from the placement of working-class evacuees with middle- or upper-class householders (Boyd, 1944). The cultural divide that existed between some evacuees and their hosts was reflected in complaints from the receiving areas about dirty and verminous city children who seemed to have little concept of modern sanitary habits. One Glasgow mother allegedly told her six-year old child: 'You dirty thing, messing the lady's carpet. Go and do it in the corner' (Titmuss, 1950, p. 122). It is evident, therefore, from the anecdotal evidence that evacuation in Scotland was a wide-scale intervention with the potential to cause disruption and distress to the lives of the children involved.

Aim

The aim of the present study is to investigate the impact of wartime evacuation on the average cognitive ability of Scottish pre-school children as measured in later childhood. The study uses the 36-Day Sample, a representative subgroup of the Scottish Mental Survey of 1947: a nationwide exercise that tested the intelligence of nearly every 11-year-old child attending school on a single day in 1947. Given previously reported differences in average intelligence test scores between regions of Scotland (Deary, Whalley, & Starr, 2009; Scottish Council for Research in Education, 1949) - findings that could explain any intelligence difference between evacuees and non-evacuees, if these groups originated from different places – an important aspect of the present study is to consider the association between evacuation and intelligence of children living within the Scottish sending areas only. In a secondary analysis, a sibling comparison study is conducted using a subset of the cohort – the 6-Day Sample – to test whether or not the associated results are biased by confounding (or reverse causation) of familial intelligence, given the self-selected nature of evacuation.

Method

36-Day Sample

The Scottish Mental Survey 1947 (SMS1947) was a nationwide exercise, conducted under the auspices of the Scottish Council for Research in Education (SCRE), to investigate the average

intelligence of Scotland's children (Deary, Whalley 1947, the survey involved the testing of 70,805 Scots born in 1936, of mean age 11, who completed a general cognitive ability test at their schools. The SMS1947 also collected additional data on subsamples. The '36-Day Sample' is a representative subgroup of the SMS1947 (SCRE, 1953), whose members were selected on the basis of being born on the 1st, 2nd and 3rd days of each month in 1936. The head teachers of these selected children completed a detailed 25-item Sociological Schedule on their pupils. The total sample with completed Sociological Schedules was *n* = 6,301 (3,184 girls and 3,117 boys).

6-Day Sample and siblings

The 6-Day Sample is an even more select subgroup of the SMS1947 than the 36-Day Sample. It comprised those children born on the first day of the even-numbered months of 1936. Again, this sample was carefully selected in order to achieve social and geographical representativeness of the entire population of 11 year-old schoolchildren living in Scotland in 1947 (MacPherson, 1958). As well as completing the group-administered SMS1947, this cohort completed an individual intelligence test and the same test was given to the members' younger siblings as and when they reached 11 years of age. The 6-Day Sample comprises 1,208 individuals, including 618 girls and 598 boys; intelligence data exist for 1,592 of their siblings.

Research design

The study is of a natural experiment-type design, assessing differences between an intervention (evacuated) and control (non- evacuated) group on observed variables. The selection of the evacuation group was to a large extent determined by the geographical location of the children's family homes. The government-initiated scheme requested families to organise their children for assembly at local schools, for the evacuation, although attendance was non-obligatory. Figure 1 shows the allocation data of the 36- and 6-Day Samples for evacuated and non-evacuated groups. In the Sociological Schedules of the 36-Day Sample, evacuation status was completed for 6,082 sample members (96.5% of the cohort) and, among these, 768 (12.6%) were evacuated during World War II. In the 6-Day Sample, of the cohort of 1,107 with complete evacuation data (91.6%), 160 children (14.5%) were evacuated. & Starr, 2009; SCRE, 1949). Carried out on 4th June Among these, 91 had one or more sibling with an age 11 intelligence score and, of these, 73 had one or more sibling who was indicated as less likely to have been evacuated.

Sociological Schedule and cognitive ability measures

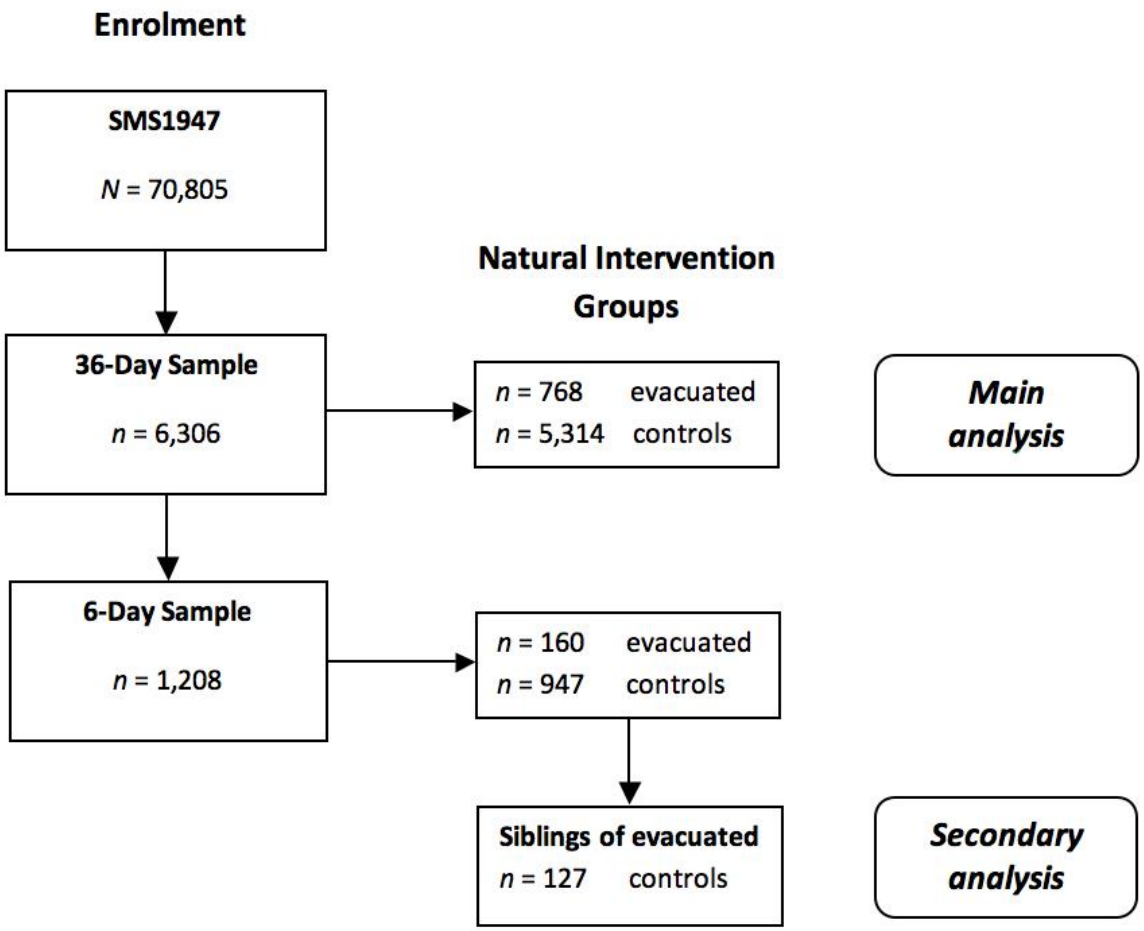
Evacuation status was recorded for each child as a 'Yes' or a 'No' in the Sociological Schedule. For those evacuated, even for a few days, head teachers were asked to report the *education authority* to which the child had been evacuated and the *length of evacuation* in months. The minimum period of evacuation (e.g. two or three days) was re-coded as 0.1 month.

The schedule incorporated other types of personal data, some of which have associations with intelligence test performance that could be used as control variables in the analysis. Geographical information included the *place of residence at birth*, which would indicate where the child was evacuated from (with the caveat that a very small proportion might have moved from their locale by the time of evacuation). Family particulars incorporated *size of family* in 1947; the mother's date of birth which was used to calculate *maternal age at birth*; and the number of rooms in the home, as well as the number of people living in the home in 1947, which were utilised to estimate an *occupancy rate* (or overcrowding) variable, i.e. *n* rooms/*n* people. *Father's occupation* (or that of the main guardian) in 1947 was also recorded. This was re-coded to a five-level categorical variable, using the 1951 Classification of Occupations (General Register Office, 1956), with higher values indicating greater socio-economic status (SES): professional (5), intermediate (4), manual or non-manual skilled (3), semi-skilled (2), and unskilled (1). *School class size* has been included as an education variable in the analysis, given that overcrowded classrooms may have impeded attention and learning (Blatchford, Bassett, & Brown, 2011; Blatchford, Bassett, Goldstein, & Martin, 2003). This was calculated from the ratio of number of pupils to full-time teachers in the participating schools. Physical characteristics of the child were further recorded, including *height* (in inches) and *weight* (in pounds). If the child had any *physical disability* these were reported too. These included defective vision, deafness, epilepsy, meningitis, chorea, encephalitis, and congenital paralysis.

General intelligence was measured using the Moray House Test (No. 12), which was group-administered within schools by teachers across the whole of Scotland in the SMS1947. This began with an eight-item practice test, followed by the actual test which incorporated 71 items. These assessed a range of verbal and non-verbal reasoning skills and used a combination of different types of questions. For example, verbal items included same-opposites, word classification, analogies, proverbs, mixed sentences, and reasoning. Non-verbal aspects featured arithmetic, spatial items, and cypher decoding (see Deary, Whalley, & Starr, 2009, for the full list). Teachers read out verbal instructions and children then completed as many items as possible within a 45-minute session. The maximum possible score for the test was 76. Cases were excluded from the analysis if scores were recorded zero (n = 53).

The individually-administered intelligence test given to the 6-Day Sample, and their younger siblings, was the Terman-Merill version (Form L) of the Stanford Binet test (Terman & Merrill, 1937). The testers were trained volunteers, largely comprising educational psychologists (Maxwell, 1961). The Terman-Merill test included 129 questions relating to verbal and non-verbal reasoning. Individual performance scores were converted to standardised scores, where M = 100 and SD = 15. These data are used to assess possible selection bias in our main results (see the statistical analysis section for further details).

Figure 1. Sample selection and assignation to evacuated and non-evacuated groups



Note. Secondary analysis, to account for confounding by familial intelligence, included evacuated 6-Day Sample members (n = 160) and their siblings who were not evacuated (n = 127).

Statistical analysis

Independent samples t-tests and chi-square tests were used to investigate group differences between evacuated and non-evacuated children on continuous and categorical variables respectively. These were conducted for the entire sample and then repeated for only those children born within evacuation sending areas given the socio-demographic differences between sending and non-sending areas. Linear regression was carried out to test whether evacuation status predicted intelligence test scores independently of potentially confounding factors. Covariates included in the model were those measures from the Sociological Schedule that significantly correlated with the Moray House test score ($p < .05$). Models were tested for multi-collinearity. These analyses were conducted in *IBM SPSS Statistics Version 19*.

The above analyses looked upon cognition as the outcome and evacuation as a possible cause. However, for genetic and environmental reasons, the intelligence of children and their parents is correlated. It is possible that the decision to evacuate could have tapped into parents' intelligence and that any evacuation-intelligence link might in part be reverse causation/confounding. So, to test this likelihood, we used data from the 6-Day Sample and their siblings. Those younger siblings born after the main evacuation years (1939 to 1941) were less likely to have been evacuated during World War II, compared to those born before or during this period. A comparison of the mean intelligence test score of evacuated 6-Day Sample members with that of their siblings, who were unlikely to have been evacuated, would formally test whether confounding by parental intelligence influenced an evacuation-intelligence association. If no difference was to exist between the mean IQ performance score of evacuees, relative to their non-evacuee younger siblings, then parental selection bias, or other selection bias operating at the level of the family, remained plausible.

To test whether there was a difference in the mean IQ of evacuated and non-evacuated siblings, multilevel modelling was applied in *MLwiN 2.26* to take account of clustering of siblings within families, thus implicitly allowing for genetic and environmental correlations within families.

The model to be fit was:

$$IQ = a + b.S + u + e$$

where a and b are regression coefficients to be estimated, and S is a dichotomous indicator of not having been ('1') or having been ('0') evacuated: that is, '1' means a sibling and '0' a 6-day sample member. Thus b is the coefficient of interest. The term u varies randomly at the family level: Normal, mean 0, variance Var(u). The term e varies randomly at the individual level: Normal, mean 0, variance Var(e). The terms u and e are uncorrelated.

Var(u) and Var(e) are to be estimated. The within-family correlation is:

$$Var(u)/[Var(u) + Var(e)]$$

Results

Description and comparison of evacuated and non-evacuated groups

Table 1 shows the differences between all evacuated and all non-evacuated children according to the Sociological Schedule variables and Moray House Test scores. The ratio of girls to boys was slightly higher among evacuated children (52.8 vs 47.2%) relative to non-evacuated children (50.1 vs 49.9%), but this difference was not statistically significant ($\chi 2 = 2.10$, $df = 1$, $p = .147$). The evacuated children scored on average 1.3 points higher (SE difference = 0.6) on the Moray House test compared to their non-evacuated peers, which was statistically significant ($t = -2.15$, $df = 929.3$, $p = .03$) albeit a low effect size (Cohen's $d = .08$). This apparent boost in performance was recorded despite the fact that in 1947, at age 11, the evacuated children were of significantly lower average socio-economic status according to their father's occupational code ($\chi 2 = 29.6$, $df = 4$, $p < .001$) and had a higher room occupancy rate in the home ($t = -4.47$, $df = 985.5$, $p < .001$); they were in larger school classes ($t = -12.7$, $df = 1097.1$, $p < .001$); they were lighter in weight, by one pound on average, relative to non-evacuated children ($t = 2.57$, $df = 6002$, $p = .01$); and they showed a greater incidence of physical disability ($\chi 2 = 16.5$, $df = 1$, $p < .001$).The evacuated children were born in specific Scottish localities and it is possible that regional trends may have produced some of the sociological differences, and indeed the intelligence difference, between the two groups. For example, more than half of evacuated children were born in Glasgow (58%) and the rest were mainly born in Edinburgh (14%), Dundee (7%), Clydebank (5%), and Greenock

(3%). In contrast, non-evacuees were more evenly distributed across a range of urban and rural areas of Scotland, with only 20% and 7% born in the major cities of Glasgow and Edinburgh respectively. Table 2 reports differences between evacuated and non-evacuated children born in Scotland's evacuation sending areas only. A noticeable difference from Table 1 is that within sending areas there were no longer socio-economic differences between the two groups. Yet the higher mean intelligence score of evacuated children persisted: a 1.5-point mean (*SE* = 0.7) advantage relative to non-evacuees (t = -2.08, df = 1186.9, p = .038). Furthermore, evacuees still ended up in larger classes after the war (t = -4.41, df = 1302.8, p < .001) and showed a significantly greater incidence of physical disability compared to their non-evacuated peers ($\chi 2$ = 7.33 (1), p = .007).

Table 1. Comparison of evacuated and non-evacuated children in the 36-Day Sample

	Evacuated		Not evacuated		*M* (and *SE*) difference;
	***n* (%)**	***M* (*SD*)**	***n* (%)**	***M* (*SD*)**	**significance value**
Intelligence score	688	37.5 (14.5)	4,810	36.2 (15.5)	-1.27 (0.60); p = .032
Maternal age at birth	751	28.4 (5.9)	5,107	28.8 (6.1)	0.35 (0.24); p = .142
Height (inches)	763	53.8 (2.9)	5,258	54.0 (2.9)	0.14 (0.11); p = .198
Weight (pounds)	763	68.6 (10.3)	5,241	69.7 (10.9)	1.08 (0.42); p = .010
Family size	768	3.71 (2.00)	5,279	3.89 (2.31)	0.17 (0.08); p = .028
Occupancy rate	769	2.30 (1.18)	5,266	2.10 (1.13)	-0.20 (0.04); p < 001
School class size	772	33.8 (5.7)	5,300	31.0 (6.6)	-2.85 (0.22); p < 001
Fathers' occupation					$\chi 2$ (df);
professional	10 (1.3)		52 (1.0)		significance value
intermediate	43 (5.6)		459 (8.8)		
skilled	420 (54.8)		2,613 (50.1)		
semi-skilled	114 (14.9)		1,091 (20.9)		
unskilled	179 (23.4)		1,002 (19.2)		$\chi 2$ = 29.6 (4), p < .001
Female	408 (52.8)		2,660 (50.1)		$\chi 2$ = 2.10 (1), p = .147
Physical disability	94 (12.2)		417 (7.9)		$\chi 2$ = 16.5 (1), p < .001

Notes. Intelligence data were missing for 588 individuals (9.6%) of the sample for whom evacuation status was recorded. There was no significant difference in the rate of evacuation among those with IQ data (14.3%) and those without (16.7%): Pearson chi-squared = 1.506(1), p = .220.

Table 2. Comparison of evacuated and non-evacuated children born within sending areas of evacuation

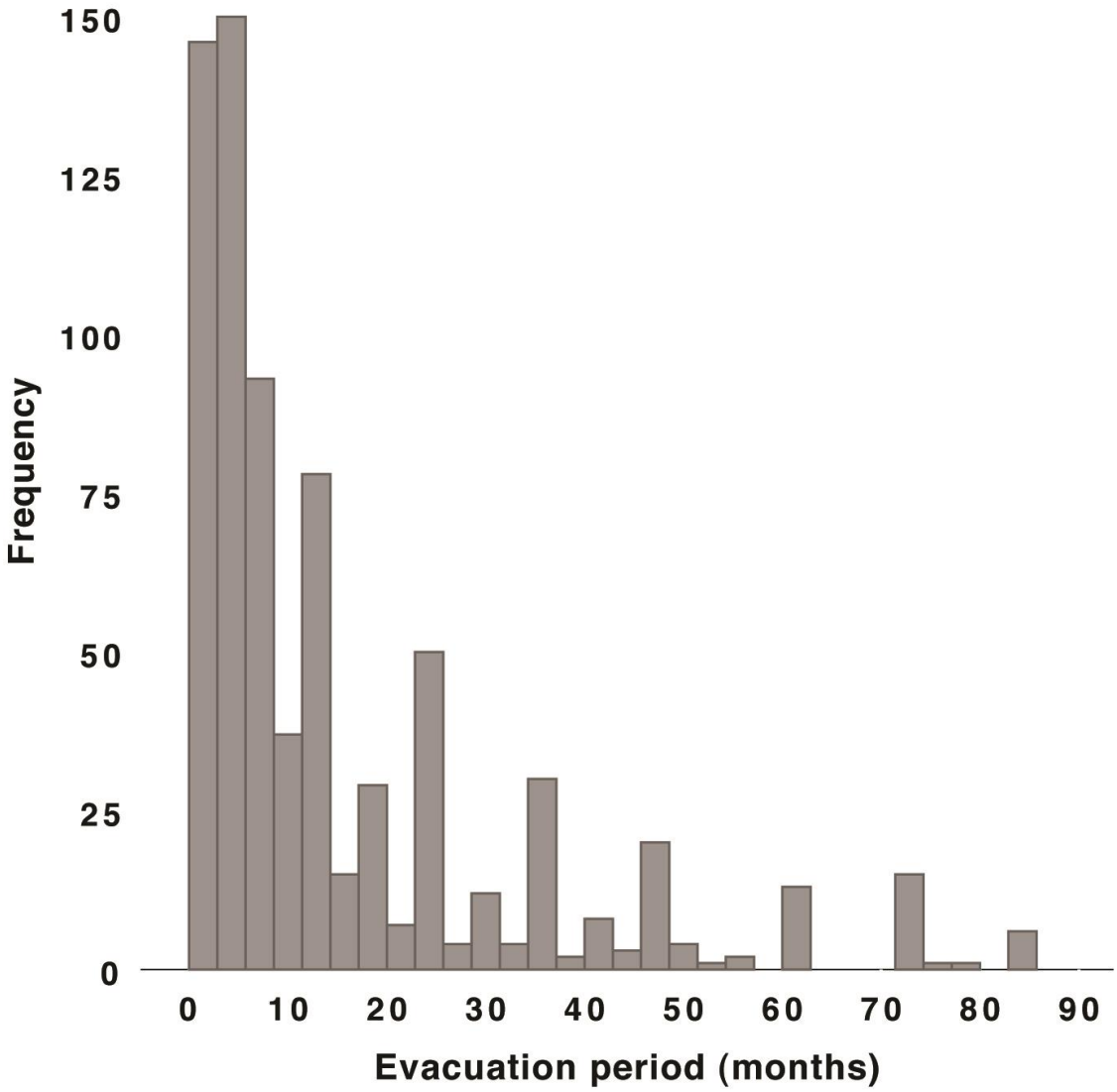
	Evacuated		Not evacuated		*M* (and *SE*) difference; significance value
	***n* (%)**	***M* (*SD*)**	***n* (%)**	***M* (*SD*)**	
Intelligence score	603	37.5 (14.5)	1,571	36.0 (15.9)	-1.48 (0.71); $p = .038$
Maternal age at birth	658	28.5 (6.0)	1,658	28.9 (6.3)	0.41 (0.28); $p = .152$
Height (inches)	668	53.7 (2.9)	1,719	53.7 (2.9)	-0.08 (0.13); $p = .553$
Weight (pounds)	668	68.3 (10.1)	1,720	68.0 (10.2)	-0.29 (0.46); $p = .535$
Family size	673	3.78 (2.00)	1,728	3.80 (2.19)	0.01 (0.09); $p = .885$
Occupancy rate	673	2.36 (1.19)	1,723	2.36 (1.29)	-0.02 (0.06); $p = .685$
School class size	675	34.0 (5.4)	1,737	33.0 (5.7)	-1.11 (0.25); $p < .001$
Fathers' occupation					$\chi 2$ (*df*);
professional	7 (1.0)		16 (0.9)		significance value
intermediate	32 (4.8)		109 (6.4)		
skilled	363 (54.2)		888 (52.1)		
semi-skilled	107 (16.0)		261 (15.3)		
unskilled	161 (24.0)		430 (25.2)		$\chi 2 = 2.99$ (4), $p = .560$
Female	355 (52.6)		863 (49.6)		$\chi 2 = 1.71$ (1), $p = .191$
Physical disability	84 (12.5)		153 (8.8)		$\chi 2 = 7.33$ (1), $p = .007$

Duration and destination of evacuation

The duration of evacuation was recorded for 731 evacuees, leaving only 4.8% of the sample with missing data. Figure 2 shows the positive skew of evacuation duration for the sample, as well as its wide distribution ($M = 14.8$ months, $SD = 17.8$). It is clear that some children were evacuated for a short period of a few days or weeks, whereas others spent the entire duration of the war in the receiving homes. The average duration of evacuation did not differ significantly for boys and girls (Mann Whitney U Test: $p = .340$). Moreover, duration of evacuation as a continuous variable was not associated with intelligence test score ($r_s = .054$, $p = .165$). In categorising the evacuated sample into five groups, ranging from <1 month to >1 year, the average intelligence test scores increased incrementally with longer duration of evacuation (see Table 3). However, this was not close to reaching a level of statistical significance in an ANOVA test ($F = .493$, $df = 4$, $p = .741$).

Among the 741 evacuees on whom there were data on the education authority of their evacuation destination, 96.6% were accommodated within Scotland, while the remainder went (presumably privately) to England, Wales or Ireland. The Scottish council region to receive the most evacuated children was Argyll and Bute, taking in over 10% of the sample. Other popular regions were Aberdeenshire, Perth and Kinross, South Lanarkshire, and Dumfries and Galloway, each receiving 6% to 7% of the sample. Given the geographical dispersion of evacuees in this sample within these receiving areas, as well as the lack of data on the receiving homes and the host families, this aspect of evacuation can only be reported on, and is of limited value in statistical analysis.

Figure 2. Distribution of evacuation duration in the 36-Day Sample



Notes. *n* = 731; *Mdn* = 7.0 months

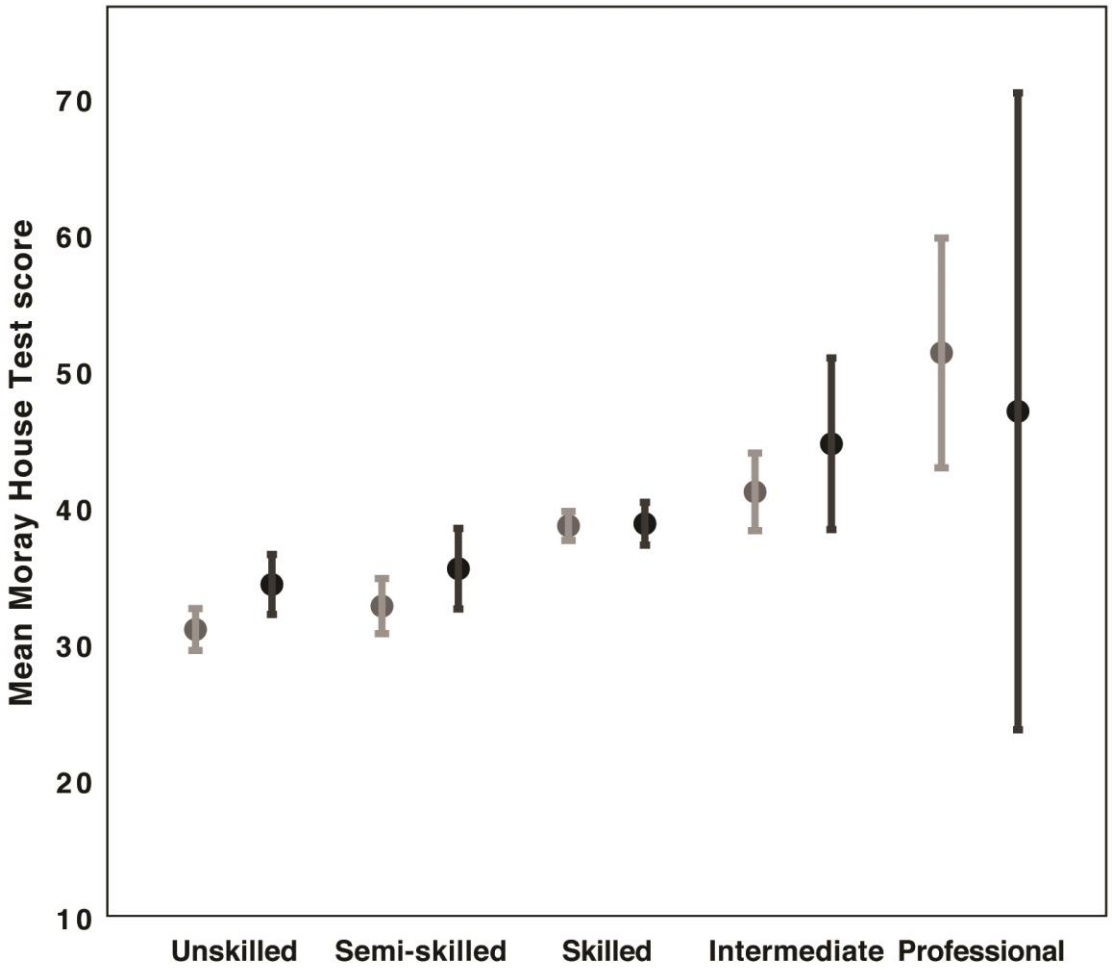
Table 3. Mean intelligence test scores by evacuation duration group

	n	*M*	*SD*
Not evacuated	1,571	36.04	15.86
< 1 month	33	35.45	14.61
One to 3 months	94	36.85	15.16
3 to 6 months	123	37.24	15.11
6 to 12 months	104	38.11	14.69
>1 year	249	37.94	13.89

Regression analysis

Regression analyses were carried out using data only from those children born within the World War II sending areas, and who had completed data on all variables (n = 2,091). The positive association between evacuation and intelligence, when evacuation status was the only independent variable in the regression model, reached a trend level of statistical significance in this slightly reduced sample (*B* = .088, CI 95% -.006 to .183, *p* = .067). In models adjusting for single additional covariates in turn, no variable was found to attenuate the magnitude of this trend effect (results not shown), suggesting a lack of potential confounding or mediation by our observed covariates. There was no evidence either that socio-economic status moderated the association between evacuation and intelligence; that is, the relatively higher mean IQ performance score for evacuees was apparent across socio-economic groups (see Figure 3). By adjusting for physical disability, however, the effect of evacuation on intelligence test score increased slightly and became statistically significant (*B* = .097, CI 95% .003 to .192, *p* = .044). Therefore, without accounting for the higher frequency of physical disability among evacuees, the association between evacuation and intelligence would have been less evident. Nevertheless, it was still detectable and not wholly suppressed by the difference in frequency of physical disability.

Figure 3. Mean intelligence by socio-economic status and evacuation group



Notes. Moray House intelligence test mean performance score (maximum 76) according to socio-economic status and evacuation status groups. Black and grey error bars represent evacuated and non-evacuated groups respectively. Evacuees perform above non-evacuees across the social strata, with the exception of the professional groups that have very low sample sizes.

Table 4 shows the beta coefficients and their 95% confidence intervals, in multivariate regression, of evacuation status and covariates in predicting a one *SD* increase in Moray House test score. The model accounted for 18.4% of the variance in the dependent variable. The results show that, after controlling for highly significant predictors of intelligence, including socio-economic status indicators, physical disability, and family size, the association between evacuation status and higher intelligence test score was a non-significant trend (*B* = 0.80, 95%CI -.006 to -.166, *p* = .070).

Table 4. Beta coefficients in a multiple regression model to predict a one SD change in intelligence test score

	B	CI 95%	Partial *r*	sig.
Female	.090	.013, .168	.050	.022
Fathers' SES	.124	.082, .167	.124	<.001
Occupancy rate	-.103	-.139, -.068	-.125	<.001
Evacuated	.082	-.004, .168	.041	.062
Disability	-.156	-.285, -.027	-.052	.018
Height	.073	.054, .091	.164	<.001
Weight	.002	-.003, .007	.018	.419
School class size	-.003	-.010, .004	-.017	.441
Family size	-.075	-.095, -.055	-.161	< .001

Notes. Analysis restricted to sample members born in sending areas (n = 2091). Model excluded maternal age, which was not associated with intelligence in the sample (p > .05).
A weighted variable was included in the model to account for potential bias from missing intelligence data. This was calculated from logistic regression with data on the full cohort, and used the inverse probability of each case having valid intelligence data, as predicted by evacuation status, physical disability status, height, weight, class size, and family size. This made negligible difference to the coefficients as compared to a model without it.

Sibling analysis

In the subgroup comparison between 6-Day Sample members and their siblings, the non-evacuation status of siblings (*n* = 127), relative to the evacuation status of 6-Day Sample members (*n* = 160), was significantly associated with lower mean scores on the Terman-Merrill intelligence test (*B* = -5.013, *SE* = 2.177, *p* = .02). However, it was important to redo the analysis allowing for the clustering of data points within families. This is because it is known that, within the 6-Day Sample, larger families had lower mean IQ scores (see Deary, Whalley, & Starr, 2009, p. 22). In this comparison, therefore, whereas any sibling from a 6-Day Sample evacuated member in a two-child family adds one IQ score to the control group, those with more siblings add a greater number, and these will tend to be lower, thus spuriously reducing the mean of the sibling control group. In other words, this analysis is sub-optimal because the control group is more biased towards the mean IQ of larger families than the 6-Day Sample evacuated group. The within-family correlation on intelligence score was *r* = 0.53. The beta coefficient in the multilevel model for the difference was -2.024 (*SE* = 1.794). Although the non-evacuated status of siblings, relative to the evacuated status of 6-Day Sample members, was still associated with lower mean IQ scores, this effect was no longer statistically significant once family clustering of intelligence test scores was accounted for (*p* = 0.26).

Discussion

An analysis of a representative sample of Scottish schoolchildren, including boys and girls, in the 1940s reveals that, in contrast to a previous study of a Finnish male cohort, those evacuated during World War II scored on average 1.3 points above non-evacuated children (or 10% of a SD) on the Moray House Test: a small but statistically significant difference. This effect was evident despite the fact that the wartime evacuees were from more disadvantaged backgrounds, suffered from a greater proportion of disabilities, and were being educated in schools with larger class sizes after World War II, and might thus be expected to have had lower, rather than higher, IQ levels than their contemporaries. What is also relevant is that, given that the bulk of Scottish evacuations took place in 1939-1941, it is likely that most of the evacuated children in the 36-Day sample would have been between the ages of 3 and 5 years when they were billeted in receiving areas. This is the age band of the Finnish evacuees who later performed particularly poorly in their IQ tests (Pesonen et al., 2011).

In seeking to explain these Scottish results, it should be acknowledged that there are variables on which the 36-Day sample does not provide information. We do not know, for example, which children were evacuated under the official government scheme or under private arrangements; whether or not they were accompanied by their mothers or other siblings; in what types of households in the receiving areas they were accommodated; whether they drifted back home and then returned to a receiving area in the wake of the heavy bombing; and the precise ages at which they were evacuated.

With these provisos, the association between evacuation status and age-11 IQ test performance was unlikely to be explained by differences in the sending areas versus non-sending areas: a comparison of the test results of evacuees and non-evacuees born within the same sending areas found a 1.5-point mean advantage in IQ to evacuees. Nor can the differences be explained by length of evacuation, given that duration was unrelated to intelligence test score, whether measured as a continuous or categorical variable.

We are thus left to consider other explanations. Results from our sibling analysis suggest we cannot rule out the possibility of self-selection bias, because although evacuated children scored above the average of their non-evacuated siblings, this was not a statistically significant difference. Parental intelligence may have confounded the association between evacuation and IQ we observed, just as maternal intelligence has previously been shown to confound the associations between childhood intelligence and birth weight (Deary, Der, & Shenkin, 2005), breastfeeding (Der, Batty, & Deary, 2006), and smoking (Batty, Der, & Deary, 2006). Such an explanation of self-selection is consistent with the absence of any differential effect of differing lengths of time of having been evacuated. Given the self-selecting nature of the evacuation scheme, the judgements that had to made by parents about the nature of risk and the efficiency of government arrangements, as well as the practical steps they had to take to arrange evacuation (whether under the official scheme or privately), it is conceivable that the better performance of evacuated children might be in some measure due to the fact that they were the children of parents with higher IQs, and the results could therefore relate in part to heritable intelligence. There is also a chance that parents did not randomly select their siblings for evacuation and might have selected only those children who they believed had the greatest ability to cope with a new home environment. Of course, there are other plausible confounders - including differences in social and/or economic resources between evacuated and non-evacuated children, which also happen to be correlates of IQ - but such differences were not observed in the main analysis of children within sending areas, at least according to parental socio-economic status and home overcrowding. Another interpretation of our sibling results is highlighted by the authors of a previous sibling comparison study who suggested that “spill-over effects” from children receiving specialist educational intervention onto their siblings not receiving the intervention may occur and produce conservative treatment effects on intelligence (Currie & Thomas, 1993). Therefore, it is possible that within our sample any positive effects of evacuation on children’s cognitive abilities were transmitted, in turn, to their younger siblings who were not evacuated, perhaps via general knowledge, approaches to learning, and/or engagement with the environment.

Whereas self-selection at evacuation might be a likely explanation for the evacuees having higher mean intelligence, one must consider the alternative: that experiences specific to the evacuees, or indeed non-evacuees, could have caused this group difference. To deal with the experience of the 11 year-old non-evacuees first, it is conceivable that the lower test results among some of them – especially those who remained in Scottish cities – were associated with dislocations to their family lives as a result of long hours of parental war work, disruptions to schooling in the sending areas (Rutter, 1985), and the traumatic impact of bombing on subsequent learning (Stermac, Clarke, & Brown, 2013). In March 1940, for example, 96% of all primary schools in receiving areas were open full-time, whereas in the sending areas, 5% only were running full-time (Lloyd, 1979). Furthermore, how successful the attempt was to minimise educational disruption in sending areas varied between cities. Dundee suffered comparatively longer school closures than other cities, whereas Edinburgh, a model city for the whole of Britain, demonstrated "speedy restoration of her educational service" (Lloyd, 1979, pp. 69). The discrepancy between mean intelligence test scores of evacuated and non-evacuated children in the present sample did appear to be greater in those children from Dundee (3.45 points), relative to Glasgow (1.94 points) and Edinburgh (0.95 points) (data not presented), which could support this hypothesis. However, given that most school disruption came at the beginning of the war in Scotland (Lloyd, 1979), it is not clear how the 36-Day Sample non-evacuees from these cities would have been affected by insufficient schooling, given that most were of pre-school age at the time.

Conversely, we must also consider the possibility that the test results were partly the result of the positive impact of evacuation (even if experienced only for short periods) on the children concerned. Although the absence of cumulative environmental effects of being placed in a billeted home were shown in the data, 'early life stresses' of evacuation might have had a beneficial impact on average cognitive ability since they acted as a stimulant to mental development through a shift in physical and/or social environments. In this regard, a period spent in an unfamiliar billet in a Scottish receiving area, at a formative age, might have encouraged greater communication skills and problem-solving behaviour. It may also be the case that the children, and the parents who accompanied them, were introduced to a wider range of stimuli, to the 'ways' of the educated middle classes, and potentially greater social and economic resources. For example, a shift to the dietary patterns of more affluent/rural host families may have brought with it nutritional benefits which enhanced early infant cognitive development. That such factors might have outweighed any potential adverse effects of evacuation may only have been possible given that many Scottish pre-school children, while separated from their fathers, were evacuated with their mother and/or siblings (Boyd, 1944). This would surely have buffered the trauma of leaving home. In contrast, in the previous Finnish study, the evacuation experience may have been a greater 'stressor', given that children were routinely separated from both parents and billeted in a foreign country where a different language might have been spoken by the hosts (Pesonen et al., 2011). Compared to that experience, the relevant linguistic variation within Scotland was less, being that of dialects rather than (for example) the difference between Finnish and Swedish noted by Pesonen et al. (2011: 337): the official evacuation scheme operated outside the areas where Gaelic was the dominant language. Furthermore, the mean length of evacuation was slightly longer for the Finnish (1.7 years) compared to Scottish (1.3 years) children. The hypothesis that Scottish evacuation stimulated cognitive development is reminiscent of the intensive pre-school intervention programmes to boost intellectual outcomes, particularly among socio-economically disadvantaged children (Campbell et al., 2002; Currie & Thomas, 1993). Hunt (2010) suggests that the micro-environment of the home has 'a substantial influence on intelligence during the early childhood years' and it is possible that the wartime evacuation of thousands of Scottish children to temporary new homes increased their average IQ performance. To support this, a very small study by Boyd (1941) in the immediate aftermath of the first Scottish evacuees returning home, in which ten 10-14 year-old children who were evacuated were compared to 46 of their peers not evacuated, found that among evacuees, improvements were shown in speech, obedience and general good behaviour, and there was less quarrelling and grumbling, whereas among those not evacuated, these behaviours

appeared to have deteriorated. Although this was not the age group under investigation in the present study, it does suggest positive outcomes for some older children evacuated during World War II in Scotland and perhaps was the result of examples of better behaviour and conduct, set in the receiving homes.

If we accept the notion of the positive impact of evacuation on cognitive performance, in wider historical terms the fact that 11 year-old former Scottish child evacuees performed better in their IQ tests than non-evacuees may give some credence to the so-called levelling effects of the Second World War on British society (Marwick, 1970). It has been argued that pre-war Scottish educational policy and practice, though widening opportunity significantly compared to earlier times, still tended to favour the children of middle-class homes, and that the war accentuated this divide (Lloyd, 1992, p. 334). However, given that evacuees included individuals from urban working-class backgrounds, and from some of the most deprived areas of Scotland, the experience of war might appear to have benefited these children cognitively. Indeed, while the poor condition of many of the evacuees arriving in the reception areas, is claimed to have helped inspire a wartime reformist consensus in Britain that paved the way for improved welfare provision (Titmuss, 1950), perhaps evacuation also helped in a small manner to boost the life chances of Scotland's disadvantaged children in more cerebral ways.

Without data on baseline cognitive ability of evacuees and non-evacuees in this natural experimental-design study, we can only speculate as to the extent to which evacuation (or non-evacuation) affected cognitive performance, if at all, or whether the groups differed before intervention. One relevant observation was the greater frequency of individuals with childhood physical disability in the higher cognitive performance group (evacuees), when one would have expected their presence to reduce mean cognitive performance relative to non-evacuees, all other factors being equal. Indeed without adjusting for physical disability there was no statistically significant difference in mean group intelligence. Nevertheless, although there are certain understandable attractions to the positive impact case, given that our sibling-analysis results could not confidently rule out self-selection effects, perhaps the likelihood that evacuees and non-evacuees started out with different mean cognitive abilities should remain as our most cautious explanation for this study's findings.

Acknowledgements

The work was supported by a UK cross-council Lifelong Health and Wellbeing initiative grant (MRCG1001401), which includes a research fellowship for CMC. IJD and CMC are members of The University of Edinburgh Centre for Cognitive Ageing and Cognitive Epidemiology, part of the cross council Lifelong Health and Wellbeing initiative (G0700704/84698). Funding from the Biotechnology and Biological Sciences Research Council (BBSRC), Economic and Social Research Council (ESRC), Engineering and Physical Sciences Research Council (EPSRC), and Medical Research Council (MRC), is gratefully acknowledged.

References

Barnett, W.S., & Hustedt, J.T. (2005). Head Start's lasting benefits. *Infants & Young Children*, *18*, 16-24. http://dx.doi.org/10.1097/00001163-200501000-00003

Bartels, M., Rietveld, M.J.H., Van Baal, G.C.M., & Boomsma, D.I. (2002). Genetic and environmental influences on the development of intelligence. *Behavior Genetics, 32*, 237-249. http://dx.doi.org/10.1023/A:1019772628912

Batty, G.D., Der, G., & Deary, I.J. (2006). Effect of maternal smoking during pregnancy on offspring's cognitive ability: empirical evidence for complete confounding in the US National Longitudinal Survey of Youth. *Pediatrics, 118*, 943-950. http://dx.doi.org/10.1542/peds.2006-0168

Blatchford, P., Bassett, P., & Brown, P. (2011). Examining the effect of class size on classroom engagement and teacher-pupil interaction: Differences in relation to pupil prior attainment and primary vs. secondary schools. *Learning and Instruction, 21*, 715-730. http://dx.doi.org/10.1016/j.learninstruc.2011.04.001

Blatchford, P., Bassett, P., Goldstein, H., & Martin, C. (2003). Are class size differences related to pupils' educational progress and classroom processes? Findings from the Institute of Education Class Size

Study of children aged 5-7 years. *British Educational Research Journal, 29*, 709-730. http://dx.doi.org/10.1080/0141192032000133668
Boyd, W. (1941). The effects of evacuation on the children. *British Journal of Educational Psychology, 11*, 120-126. http://dx.doi.org/10.1111/j.2044-8279.1941.tb02153.x
Boyd, W. (1944). *Evacuation in Scotland: A record of events and experiments*. London: University of London Press Ltd.
Camilli, G., Vargas, S., Ryan, S., & Barnett, S. (2010). Meta-analysis of the effects of early education interventions on cognitive and social development. *Teachers College Record, 112,* 579-620.
Campbell, F.A., Ramey, C.T., Pungello, E., Sparling, J., & Miller-Johnson, S. (2002). Early childhood education: Young adult outcomes from the Abecedarian Project. *Applied Developmental Science, 6,* 42-57. http://dx.doi.org/10.1207/S1532480XADS0601_05
Crang, J.A. (2012). The Second Word War. In E.M. Spiers, J.A. Crang & M.S. Strickland (Eds.) *A military history of Scotland*. Edinburgh: Edinburgh University Press.
Currie, J., & Thomas, D. (1993). *Does Head Start make a difference?* NBEW Working Paper No. 4406, Issued in July 1993. US: The National Bureau of Economic Research. Accessed 24th May 2013 from: http://www.nber.org/papers/w4406
Davis, O.S.P., Haworth, C.M.A., & Plomin, R. (2009). Dramatic increase in heritability of cognitive development from early to middle childhood: An 8-year longitudinal study of 8,700 pairs of twins. *Psychological Medicine, 20,* 1301-1308.
De Rooij, S.R., Wouters, H, Yonker, J.E., Painter, R.C., Roseboom, T.J. (2010). Prenatal under- nutrition and cognitive function in late adulthood. *Proceedings of the National Academy of Sciences of the United States of America, 107*, 16881–16886. http://dx.doi.org/10.1073/pnas.1009459107
Deary, I.J., Der, G., & Shenkin, S.D. (2005). Does mother's IQ explain the association between birth weight and cognitive ability in childhood. *Intelligence, 33*, 445-454. http://dx.doi.org/10.1016/j.intell.2005.05.004
Deary, I.J., Johnson, W., & Houlihan, L.M. (2009). Genetic foundations of human intelligence. *Human Genetics, 126*, 215-232. http://dx.doi.org/10.1007/s00439-009-0655-4
Deary, I.J., Whalley, L.J., Lemmon, H., Crawford, J.R., & Starr, J.M. (2000). The stability of individual differences in mental ability from childhood to old age: Follow-up of the 1932 Scottish Mental Survey. *Intelligence, 28*, 49-55. http://dx.doi.org/10.1016/S0160-2896(99)00031-8
Deary, I.J., Whalley, L.J., & Starr, J.M. (2009). *A lifetime of intelligence: Follow-up studies of the Scottish Mental Surveys of 1932 and 1947.* American Psychological Association: Washington DC, U.S. http://dx.doi.org/10.1037/11857-000
Der, G., Batty, G.D., & Deary, I.J. (2006). Effect of breast feeding on intelligence in children: Prospective study, sibling pairs analysis, and meta-analysis. *British Medical Journal 333,* 945. http://dx.doi.org/10.1136/bmj.38978.699583.55
General Register Office. (1956). Census 1951, *Classification of Occupations*. H.M. Stationary Office.
Gorey, K.M. (2001). Early childhood education: A meta-analytic affirmation of the short- and long-term benefits of educational opportunity. *School Psychology Quarterly, 16*, 9-30. http://dx.doi.org/10.1521/scpq.16.1.9.19163
Gow, A.J., Johnson, W., Pattie, A., Brett, C.E., Roberts, B., Starr. J.M., & Deary, I.J. (2011). Stability and change in intelligence from age 11 to ages 70, 79, and 87: the Lothian Birth Cohorts of 1921 and 1936. *Psychology and Aging, 26*, 232–240. http://dx.doi.org/10.1037/a0021072
Hackman, D.A., & Farah, M.J. (2009). Socioeconomic status and the developing brain. *Trends in Cognitive Sciences, 13,* 65-73. http://dx.doi.org/10.1016/j.tics.2008.11.003
Hackman, D.A., Farah, M.J., & Meaney, M.J. (2010). Socioeconomic status and the brain: Mechanistic insights from human and animal research. *Nature Reviews Neuroscience, 11*, 651-659. http://dx.doi.org/10.1038/nrn2897
Haworth, C.M.A., Wright, M.J., Luciano, M., Martin, N.G., de Geus, E.J.C., van Beijsterveldt, C.E.M., Bartels, M., Posthuma, D., Boomsma, D.I., Davis, O.S.P., Kovas, Y., Corley, R.P., DeFries, J.C., Hewitt, J.K., Olson, R.K., Rhea, S-A., Wadsworth, S.J., Iacono, W.G., McGue, M., Thompson, L.A., Hart, S.A., Petrill, S.A., Lubinski, D., & Plomin, R. (2010). The heritability of general cognitive ability increases linearly from childhood to young adulthood. *Molecular Psychiatry, 15,* 1112-1120. http://dx.doi.org/10.1038/mp.2009.55
Hunt, E. (2010). *Human Intelligence*. New York: Cambridge University Press. http://dx.doi.org/10.1017/CBO9780511781308
Johnson, W. (2010). Understanding the genetics of intelligence. Can height help? Can corn oil? *Current Directions in Psychological Science, 19,* 177-182. http://dx.doi.org/10.1177/0963721410370136
Lawlor, D.A., Batty, G.D., Morton, S.M.B., Deary, I.J., Macintyre, S., Ronalds, G., & Leon, D A. (2005). Early life predictors of childhood intelligence: Evidence from the Aberdeen Children of the 1950s study. *Journal of Epidemiology and Community Health, 59*, 656-663. http://dx.doi.org/10.1136/jech.2004.030205

Lloyd, J. (1992). Educational gains and losses in the Second World War: A Scottish perspective. *History of Education: Journal of the History of Education Society, 21*, 323-335. http://dx.doi.org/10.1080/0046760920210306

Lloyd, J.M. (1979). *The Scottish school system and the Second World War: A study of central policy and administration*. PhD thesis: University of Stirling.

MacPherson, J.S. (1958). *Eleven-year-olds grow up*. London: University of London Press Ltd.

Marwick, A. (1970). *Britain in the century of total war: War, peace and social change 1900-1967*. Harmondsworth: Penguin.

Maxwell, J. (1961). *The level and trend of national intelligence.* London: University of London Press.

Odenstad, A., Hjern, A., Lindblad, F., Rasmussen, F., Vinnerljung, B., & Dalen, M. (2008). Does age at adoption and geographic origin matter? A national cohort study of cognitive test performance in adult inter-country adoptees. *Psychological Medicine, 38*, 1803-1814. http://dx.doi.org/10.1017/S0033291708002766

Pesonen, A., Eriksson, J.G., Heinonen, K., Kajantie, E., Tuovinen, S., Alastalo, H., Henriksson, M., Leskinen, J., Osmond, C., Barker, D.J.P., & Räikkönen, K. (2013). Cognitive ability and decline after early life stress exposure. *Neurobiology of Aging, 34,* 1674-1679. http://dx.doi.org/10.1016/j.neurobiolaging.2012.12.012

Pesonen, A., Räikkönen, K., Kajantie, E., Heinonen, K., Henriksson, M., Leskinen, J., Osmond, C., Forsén, T., Barker, D.J.P., & Eriksson, J.G. (2011). Intellectual ability in young men separated temporarily from their parents in childhood. *Intelligence, 39,* 335-341. http://dx.doi.org/10.1016/j.intell.2011.06.003

Roseboom, T.J., Painter, R.C., van Abeelen, A.F.M., Veenendaal, M.V.E., & de Rooij, S.R. (2011). Hungry in the womb: What are the consequences? Lessons from the Dutch famine. *Maturitas 70*, 141-145. http://dx.doi.org/10.1016/j.maturitas.2011.06.017

Rutter, M. (1985). Family and school influences on cognitive development. *Journal of Child Psychiatry and Psychology, 26*, 683-704. http://dx.doi.org/10.1111/j.1469-7610.1985.tb00584.x

Saigh, P.S., Yasik, A.E., Oberfield, R.A., Halamandaris, P.V., & Bremner, J.D. (2006). The intellectual performance of traumatized children and adolescents with or without posttraumatic stress disorder. *Journal of Abnormal Psychology, 115*, 332-340. http://dx.doi.org/10.1037/0021-843X.115.2.332

Scottish Council for Research in Education. (1953). *Social implications of the 1947 Scottish Mental Survey*. London: University of London Press Ltd.

Scottish Council for Research in Education. (1949). *The trend of Scottish intelligence: A comparison of the 1947 and 1932 surveys of the intelligence of eleven-year-old pupils*. London: University of London Press.

Stein, Z., Susser, M., Saenger, G., & Morolla, F. (1975). *Famine and Human Development: The Dutch Hunger Winter of 1944-45*. New York, NY: Oxford University Press.

Stermac, L., Clarke, A.K., & Brown, L. (2013). Pathways to Resilience: The Role of Education in War-Zone Immigrant and Refugee Student Success. In C. Fernando & M. Ferrari (Eds.), *Handbook of Resilience in Children of War* (pp. 211-220). Springer New York. http://dx.doi.org/10.1007/978-1-4614-6375-7_15

Stewart, J. & Welshman, J. (2006). The evacuation of children in wartime Scotland: Culture, behaviour, and poverty. *Journal of Scottish Historical Studies, 26,* 100-120. http://dx.doi.org/10.3366/jshs.2006.26.1-2.100

Terman, L.M. & Merrill, M.A. (1937). *Measuring Intelligence: A Guide to the Administration of the New Revised Stanford-Binet Tests of Intelligence.* Boston: Houghton Mifflin.

Titmuss, R.M. (1950). *Problems of Social Policy*. London: His Majesty's Stationery Office.

Walker, S.P., Wachs, T.D., Grantham-McGregor, S., Black, M.M., Nelson, C.A., Huffman, S.L., Baker-Henningham, H., Chang, S.M., Hamadani, J.D., Lozoff, B., Meeks Gardner, J.M., Powell, C.A., Rahman, A., & Richter, L. (2011). Inequality in early childhood: Risk and protective factors for early child development. *The Lancet, 378*, 1325-1338. http://dx.doi.org/10.1016/S0140-6736(11)60555-2

Yasik, A.E., Saigh, P.A., Oberfield, R.A., & Halamandaris, P.V. (2007). Posttraumatic stress disorder: Memory and learning performance in children and adolescents. *Biological Psychiatry, 61*, 382-388. http://dx.doi.org/10.1016/j.biopsych.2006.06.005

AUTHOR GUIDELINES SUMMARY

Submission of Papers

All papers, written in the English language, should be submitted via the *LLCS* website as a Microsoft Word file. If there is a good reason why this is not possible, authors are requested to contact the Journal Manager **before** submitting the paper. All subsequent processes involving the author are carried out electronically via the website.

Preparation of Texts

Length. The paper should normally be **approximately 5000 words**, with longer papers also accepted up to a maximum of 7000 words. This word count excludes tables, figures and bibliography.

Font and Line Spacing. Please use Calibri (or similar sans serif) font, 12pt, with 1.5 line spacing in all main text, single space in figure or table captions.

Page Layout. All text should be justified to the left hand margin (all margins of at least 2.5cm) with no indents at the start of paragraphs and a line space separating paragraphs. All headings and sub-headings used within the body of the paper should also be left justified. Please do **NOT** use automatic text formatting.

Weblinks. To help our readers to look up cited references or other information available on the web, authors should ensure that all such references are activated.

DOIs. Do NOT include DOIs in the boibliography – they are added during editing as resolvable URLs.

Ensuring an Anonymous (Blind) Review. Please submit papers with a full detailed title page. Once a paper has been submitted to *LLCS* via the website, it will be 'anonymised' by the removal of all author name(s) and institution names on the title page, and any identifying electronic document properties will also be removed. Authors do not need to remove their name(s) from the main text or references but any reference to their work or themselves should be expressed in the third person.

Abstract. The abstract (no subheads or paragraphs) should be no more than 250 words (not part of the main word count).

Keywords. These should be included just below the author list (minimum 3 maximum 10).

Abbreviations. Words to be abbreviated should be spelt out in full the first time they appear in the text with the abbreviations in brackets. Thereafter the abbreviation should be used.

References. Please use the APA 6th edition and refer to examples in the full Guidelines.

Authors not complying with these reference guidelines will be asked to make all the necessary alterations themselves, if their paper is accepted for publication.

Notes. As a general rule, supplementary notes should be avoided, but if thought to be essential, they should *not* appear on the page as 'Footnotes', but instead, be included as Endnotes.

Supplementary material. Supplementary material may be uploaded with the submission, and if the paper is published, will be visible to the reader via a link on the RHS of the screen.

Submissions containing graphs, tables, illustrations or mathematics. All graphs, tables and illustrations should be embedded in the submitted text, and have clear, self-explanatory titles and captions. Mathematical expressions should be created in Word 2003 (or a compatible package) with equation editor 3.0, unless the author has good reason to use other software, in which case please contact the Journal Manager. All biological measures should be reported in SI units, as appropriate, followed, in the text, by traditional units in parentheses.

Author Citation. If the paper is accepted for publication, a version of the paper with all authors cited in full on the title page will be used. Only individuals who have contributed substantially to the production of the paper should be included.

Copy Editing. All accepted manuscripts are subject to copy editing, with reference back to author with suggested edits and queries for response.

Proofs. The corresponding author will be asked to view a layout proof of the article on the website and respond with final amendments within 3 days.

(Full Author Guidelines at: http://www.llcsjournal.org/index.php/llcs/about/submissions#authorGuidelines**)**

Open Journal System

The ***LLCS*** journal is produced using the Open Journal System, which is part of the Public Knowledge Project. OJS is open source software made freely available to journals worldwide, for the purpose of making open access publishing a viable option for more journals. Already, more than 8,000 journals around the world use this software.

Copyright Notice

Authors who publish with Longitudinal and Life Course Studies agree to the following terms:

- Authors retain copyright and grant the Journal right of first publication with the work, simultaneously licensed under a Creative Commons Attribution License that allows others to share the work with an acknowledgement of the work's authorship and initial publication in this journal.
- Following first publication in this Journal, Authors are able to enter into separate, additional contractual arrangements for the non-exclusive distribution of the journal's published version of the work (e.g., post it to an institutional repository or publish it in a book), with an acknowledgement of its initial publication in this journal, provided always that no charge is made for its use.
- Authors are permitted and encouraged to post their work online (e.g. in institutional repositories or on their own website) prior to and 'as approved for publication', as this can lead to productive exchanges and additional citations, as well as complying with the UK Research Councils' 'Green Model' for open access research publication.

CONTENTS

LLCS Journal can be accessed online at: www.llcsjournal.org

Published by
The Society for Longitudinal and Life Course Studies
Institute of Education, 20 Bedford Way, London, WC1H 0AL
info@slls.org.uk http://www.slls.org.uk

SLLS Society for Longitudinal and Life Course Studies