

EDITORIAL

A tribute to Harvey Goldstein

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To cite this article: Joshi, H. (2020) A tribute to Harvey Goldstein, *Longitudinal and Life Course Studies*, vol 11, no 3, 285–287, DOI: 10.1332/175795920X15885813967040

It is being said, too often in these pandemic days, that the deaths are not just statistics but human beings who are sorely missed. In the death of Harvey Goldstein through Covid-19, the Longitudinal and Life Course Studies community has lost a dear friend and a statistician of colossal scientific stature. Harvey Goldstein (1939–2020) was a founder member of the Society for Longitudinal and Life Course Studies and the founder editor of this journal's Statistics and Methodology section. Full obituaries are available [elsewhere](#), but here is a place to celebrate his contribution to this journal. As a Section Editor from 2008 to 2016, Harvey oversaw the review of many submissions, rigorously ensuring and raising their quality. He also played a valued role in John Bynner's editorial team. As an author, he appeared eight times in the first ten volumes of the journal – of articles, research notes and contributions to debates – on topics relating to statistical methodology, survey design and administrative record linkage in the context of longitudinal data collection and analysis. This issue of Volume 11 carries another of what is sadly one of his last in a prolific record of publications.

'Estimating reliability statistics and measurement error variances using instrumental variables with longitudinal data' was written with Michelle Haynes, George Leckie and Phuong Tran, from two of the institutions where Harvey continued to work, the Australian Catholic University and Bristol University. The paper is concerned with the scaled scores that are commonly used in educational and psychological research to summarise batteries of answers to sets of questions, be it in school test scores or behavioural scales such as those of Strengths and Difficulties. The summary scaled scores are often treated as continuous variables, but they are subject to measurement error. The reliability with which they can be treated as representing an underlying scale needs to be assessed. Standard tests of reliability (for example, Cronbach's alpha) depend on an assumption of independence of items within respondent (that the answer to one item does not lead to a particular answer on another). If this assumption is not met, standard reliability tests, and estimates of models using such summary scales as predictors, may not be consistent. Although this type of variable is not only used in longitudinal research, this paper exploits the case where they appear in longitudinal data with repeated measures. It offers a solution to the estimation of measurement error variance in longitudinal data where previous scores can act as instrumental variables. This is demonstrated in theory, in a simulation and in large-scale data on elementary school maths achievements and their subtests from Australian administrative records. The empirical data is handled in a two-level model (children within schools) providing

yet another example of the multilevel modelling, the development and dissemination of which will be a major part of Goldstein's legacy.

We can also celebrate Harvey Goldstein's contribution to the 1958 birth cohort, NCDS (for National Child Development Study) in his early career the Institute of Child Health and at the National Children's Bureau. The cohort is still running and into its seventh decade. Two papers in this issue are based on the evidence from that cohort as they reached late middle age. Cohort studies may lose the representativeness of the population from which they start out, for two reasons – attrition and net emigration. If either are unbalanced, the cohort's characteristics will diverge from those of the contemporary population. 'Are "healthy cohorts" real-world relevant? Comparing the National Child Development Study (NCDS) with the ONS Longitudinal Study (LS)' by Gemma Archer, Wei Xun, Rachel Stuchbury, Owen Nicholas and Nicola Shelton, makes an interesting and unusual comparison of the characteristics of people who continued to be in the NCDS cohort to age 55 with (near) contemporary evidence from a longitudinal 1% sample of the census. They show, as have others, that NCDS has lost disproportionate numbers of socially disadvantaged people, and under-represents ethnic minorities. However, the association of limiting long-standing illness at 55 with socio-economic exposures measured a decade earlier was similar in the two sources. The removal of immigrants from the census-based sample did not alter this finding. The authors conclude that though the cohort was 'healthier' than the population from which it is drawn, its evidence on socio-economic associations with a health outcome is 'representative', which will be a comfort to many other NCDS users. This sort of use of external sources to check for bias in the cohort studies is seldom attempted, and is very much something Harvey would have encouraged.

The second paper using the NCDS, now an international data resource, is from a team based in France, Marion Carayol, Gaele Albertus, Romain Fantin, Thierry Lang, Michelle Kelly-Irving, Pascale Grosclaude and Cyrille Delpierre: 'Nutritional lifestyle patterns and cancer: confounding effect of social determinants across the life course in women from the 1958 British birth cohort study'. Their study investigates all cancer and breast cancer in women to age 55, as linked to evidence on health-related lifestyle. The factor reflecting alcohol consumption was more predictive of cancer than those picking up 'healthy' diet (fruit and vegetables), less healthy diet (fatty) or physical activity. Social disadvantage in childhood and adulthood accounted for some but not all of the associations between drinking and cancer.

The third paper moves to another dataset, from Ireland, also investigating patterns of inequality in another health outcome. Siobhan Leahy, Mark Canney, Siobhan Scarlett, Rose Anne Kenny and Cathal McCrory conclude that 'Life-course social class is associated with later-life diabetes prevalence in women: evidence from the Irish Longitudinal Study on Ageing'. The outcome is type 2 diabetes, reported at Wave 1 of the nationally representative community survey in 2009–10, on older adults aged 50 and upwards, analysed in terms of socio-economic characteristics mainly collected retrospectively. Three hypotheses about the association are set out: early life as a critical period, pathway and accumulation of risk, involving combinations of socially disadvantaged conditions in early childhood and adulthood. The findings are of stronger relations for women than men, particularly if disadvantage is repeated in both childhood and adulthood. This provides strong evidence for the critical period hypothesis, and some for the beneficial effects of upward mobility in adulthood,

posited under the pathway hypothesis. The authors compare their findings with the international literature. They also discuss some evidence for why women's type 2 diabetes should be more socially patterned than men's.

The last research article, 'Young British adults' homeownership circumstances and the role of intergenerational transfers', by Ellie Suh, turns to another UK dataset and to study the social patterning of home ownership. This is a major socio-economic factor that is both the outcome of earlier advantage and a determinant of outcomes in the next generation, at least in Britain. The Wealth and Assets Survey (new to this journal) provides longitudinal evidence for 2008–14. This was a period when rising house prices had jeopardised the hitherto normative transition of young adults onto the 'housing ladder'. The difficulties of a young adult (ages 25–44) achieving home ownership are shown here to be significantly eased if parents can help – through direct provision of funds ('Bank of Mum and Dad') and/or the indirect resource of accommodation in the parental home. The intergenerational polarisation that could be under way in reaching secure housing tenure and asset acquisition will have other implications for economic and health inequalities in Britain. These findings raise the question of whether a similar story applies in the housing regimes of other countries

Our final item reflects the journal's interest in hearing about longitudinal research in developing countries. It is a Study Profile of a new educational survey in Mexico: 'The Aguascalientes Longitudinal Study of Child Development: baseline and first results', by Alfonso Miranda, Osiel González Dávila, Adriana Aguilar-Rodríguez, Antonio A. Aréchar, Daniel Zizumbo-Colunga, Yahaira Rodríguez-Martínez and Jaime Sainz-Santamaría. Aguascalientes is a state in central Mexico. The project aims to chart the educational and health development of children there into the future, with information from children, parents and schools, collected at two-year intervals, allowing for differences in home and local economic circumstances. The Aguascalientes Longitudinal Study of Child Development (EDNA) took a sample of first-grade children from a stratified sample of all state primary schools in 2017–18 and set off with data on just over 1,000 children and their primary caregivers. The article gives details of the sampling strategy, and links to further details. It is expected that EDNA will be a useful resource for policy makers, scholars and interested stakeholders. Its future analysis is likely to benefit from Harvey Goldstein's methodological tools, and comparison with prospective data collected in schools in other parts of the world.

While none of the articles in this issue were written explicitly to celebrate the contribution of Harvey Goldstein to our field, they all illustrate, in various ways, how the collection and analysis of longitudinal statistics can be applied to improving people's lives, as Peter Mortimore said in his [obituary](#) of Harvey. This set of papers can be seen as one of many tributes.

Conflict of interest

The author declares that there is no conflict of interest.