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Birth cohorts in Understanding Society: a description

Alina Pelikh (University of Essex)



Non-Technical Summary

Understanding Society provides unique opportunities to investigate cohort effects across multiple domains and over the life course by collecting data in the same way at the same time from a representative panel of people of all ages over time.

- *Understanding Society* includes sufficient numbers of adults in each birth cohort (from the 1920s to the 1990s; including BHPS respondents who joined *Understanding Society in wave 2*) to undertake comparative cohort research.
- For children there are around 7000 children born in the 5 year cohort from 2001 to 2005 and a similar number of children born between 2006 and 2010, with slightly less – 4000 – born 2011-2015, but more children from these birth years will join the study as households change. Almost 12000 children were interviewed at least once in the Youth Panel.
- For different cohorts turning 16 in the first six waves of *Understanding Society* 82% take part in the adult survey by the time they are 19, many in their 16th year.
- *Understanding Society* collects retrospective histories and current information across key life course domains such as partnership, employment, fertility. The value of collecting such data across the whole population in one sample for cohort analysis is evident. For example, using *Understanding Society* data we demonstrate the age of first job for someone born in 1920s was 15 years while for those born in 1990s was almost 20 years of age.
- We identified 30 papers based on a comparative cohort design for traditional cohort comparisons in employment or fertility trends to other less studied domains such as political values and caring. *Understanding Society* also allows for more novel cohorts to be identified for example based on when people start work or have their first child.

Understanding Society enables comparative research, based on the same data across a wide range of adult cohorts, and has data on more recent (child) birth cohorts not collected in specific cohort studies. We identified a number of actions for the Study to more fully capture life histories of those joining the study to enhance its value for cohort analysis.

Birth cohorts in Understanding Society: a description

Dr. Alina Pelikh (University of Essex)

Abstract: Longitudinal studies are designed to be employed to describe and analyse societal changes over time. The overall purpose of *Understanding Society* is to provide high quality longitudinal data about subjects such as health, work, education, income, family, and social life to help understand the long term effects of social and economic change, as well as policy interventions designed to impact upon the general well-being of the UK population. This paper showcases the opportunities that *Understanding Society* opens up for rigorous longitudinal cohort analysis of various life course trajectories and is structured as follows. Section 2 describes data and methods. Section 3 presents findings on the sample sizes of birth cohorts in *Understanding Society* and is organised in three parts. Section 3.1 provides overview on the number of respondents in both adult and youth samples. Section 3.2 focuses on discussing younger cohorts born after 1990s who joined the Study as children (including in BHPS) and their transition to adult sample. Section 3.3 covers event histories collected retrospectively and provides examples of the cohort analysis of some of the first life course transitions (e.g. transition to first job and transition to first partnership). Additionally, Section 4 presents the review of research papers that use the Study for various cohort analyses.

Keywords: birth cohort, event histories, children, fertility, life course studies

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Understanding Society: University of Essex. Institute for Social and Economic Research, NatCen Social Research, Kantar Public. (2018). *Understanding Society: Waves 1-8, 2009-2017 and Harmonised BHPS: Waves 1-18, 1991-2009*. [data collection]. 11th Edition. UK Data Service. SN:6614, <http://doi.org/10.5255/UKDA-SN-6614-12>

Corresponding author: Alina Pelikh, Institute for Social and Economic Research, University of Essex, Wivenhoe Park, Colchester, Essex CO4 3SQ, alina.pelikh@essex.ac.uk

1. Introduction

Longitudinal studies are designed to be employed to describe and analyse societal changes over time. The overall purpose of *Understanding Society* is to provide high quality longitudinal data about subjects such as health, work, education, income, family, and social life to help understand the long term effects of social and economic change, as well as policy interventions designed to impact upon the general well-being of the UK population (University of Essex, Institute for Social and Economic Research, NatCen Social Research, Kantar Public, 2018).

One perspective on changes in the society can be described by investigating individual transitions and trajectories in relation to various socio-cultural and institutional changes over the Life Course (Elder, 1985; Giele & Elder, 1998). Transitions mark a discrete life change (event) in a particular life course stage as people move from one role to another (e.g. from being a student to starting a working life). Transitions therefore result in change in status and/or perceived social role and a sequence of them together form life course trajectories. More broadly, the approach includes four central dimensions: *the interplay of human life and historical times* (macro-level period effects), *the timing of lives, linked or interdependent lives* (all levels of social interactions, such as family, kinships, friends, and other social networks as well as geographical context), *and human agency in choice making* (motives, values, and adaptation strategies). As various socio-economic developments affect people of different ages in different ways, societal changes can be analysed by taking the “cohort approach” and looking at intra- and inter-cohort changes over time (Ryder, 1965). *Understanding Society* provides unique opportunities to investigate these cohort effects across history and the life course by collecting data in the same way at the same time from a representative panel of people of all ages over time.

This paper showcases the opportunities that *Understanding Society* opens up for rigorous longitudinal cohort analysis of various life course trajectories and is structured as follows. Section 2 describes data and methods. Section 3 presents findings on the sample sizes of birth cohorts in *Understanding Society* and is organised in three parts. Section 3.1 provides overview on the number of respondents in both adult and youth samples. Section 3.2 focuses on discussing younger cohorts born after 1990s who joined the Study as children (including in BHPS) and their transition to adult sample. Section 3.3 covers event histories collected retrospectively and provides examples of the cohort analysis of some of the first life course transitions (e.g. transition to first job and transition to first partnership). Additionally, Section 4 presents the review of research papers that use the Study for various cohort analyses.

2. Methods and data

Understanding Society, the UK Household Longitudinal Study (UKHLS), began with a representative probability sample of approximately 40,000 households (at Wave 1) in the United Kingdom, i.e., the geographical area of the countries England, Scotland, Wales and Northern Ireland. The Study follows respondents recruited in Wave 1 (the General Population Sample (GPS) and the Ethnic Minority Boost Sample (EMBS)). From Wave 2 onward the main study also includes information collected from continuing participants of the British Household Panel Survey (BHPS), a household panel survey of around 8,000 households in the UK, which has completed 18 annual waves of data collection and has been run by ISER since it began in 1991.¹ From Wave 6 onward the main study also includes an Immigrant and Ethnic Minority Boost Sample (IEMBS) (University of Essex, Institute for Social and Economic Research, NatCen Social Research, Kantar Public, 2018).

First, we use eight waves of *Understanding Society* to describe birth cohorts present in the Study for at least in two waves. Data on population aged 16 and over is taken from *indresp* files, data on population younger than 16 years old (and thus not eligible for an adult interview yet) is taken from *indall* files where all persons in household are enumerated. The sample covers Original Sample Members (OSM) and Permanent Sample Members (PSM) from General Population Sample (GPS) and Ethnic Minority Boost Sample (EMBS) recruited in 2009-10 as well as the British Household Panel Survey (BHPS) members who joined *Understanding Society* in Wave 2. We do not focus on Temporary Sample Members (TSM) in this piece as by default they remain eligible for interview only as long as they are co-resident in an OSM/PSM household. At present, there is only one category of TSM who are followed for interview after they no longer live with an OSM: any TSM father of an OSM child born after Wave 1 and observed to be co-resident with the child at the survey wave following the child's birth. Thus, considering the current following rules, including the TSMs in our analyses of "sample longevity" as well as the transition from youth to adult sample could provide biased cohort estimates.²

¹ The BHPS was designed as an annual survey of a nationally representative sample of more than 5,000 households drawn from the Postcode Address File in England, Wales, or Scotland south of the Caledonian Canal (Taylor et al., 2010). Additional sub-samples were added to the BHPS in Wave 9 (1999-2000) and Wave 11 (2001-2002). From Wave 9, two additional subsamples from Scotland and Wales were recruited, and at Wave 11 an additional sample from Northern Ireland (which formed the Northern Ireland Household Panel Study or NIHPS), was added to increase the coverage of the Study to the whole of the United Kingdom. The BHPS was carried out between 1991 and 2009 (18 waves). The BHPS Wave 19 became part of *Understanding Society* Wave 2 (fieldwork carried out between January 2010 and March 2011). From Wave 2 onwards, the BHPS sample has become a permanent part of *Understanding Society*.

² For a detailed discussion of opportunities for research focusing on TSMs see Fumagalli (2019) *Understanding Society Methodological Briefing: Understanding the role of Temporary Sample Members for Understanding Society*.

Next, we analyse for how long adult individuals from different cohorts are present in the Study using the Kaplan-Meier estimator (only GPS and EMBS sample members born between 1908 and 1994 and present in the Study at least in two waves).

Second, we analyse data from the Youth Panel (8 waves) to present the coverage of the younger cohorts born between 1993 and 2000. Next, we study the transition rates to the adult sample among 15 year olds (especially for those interviewed in the Youth Panel). We additionally present the number of BHPS children (those aged less than 16 in 1991, i.e. born after 1975) followed into *Understanding Society*. For these cohorts various life course trajectories could be created using both prospective and retrospective data which opens up opportunities to study the life course of the youngest cohorts not covered in other studies as well as look into detail into intergenerational transmission of various behaviours. The sample also includes children of BHPS sample members born after the beginning of *Understanding Society*.

Third, we show how different cohorts are represented in the data on various event histories which were collected retrospectively in *Understanding Society*. This refers to economic activity histories collected in Wave 1 (2009-2010) and Wave 5 (2013-2015) and lifetime childbirth, marital and relationship histories (collected in Wave 1 (2009-2010; for the new entrants) and Wave 6 (2014-2016); for IEMB sample). We provide an example of using the data for investigating how the timing of some of the first life course transitions has changed by cohorts. We use combined retrospective histories of economic activity to compare the timing of entering the labour market (i.e. taking up first full-time job) for men and women born between 1921 and 1994. We additionally show how the unique combined data from the BHPS and the *Understanding Society* can be employed to investigate changes and continuities in life course trajectories of the most recent cohorts (born between 1974 and 1991) about whom little is known. An example looks at how timing of first coresidential partnership has changed over the last 25 years using finer 5-year birth cohorts.

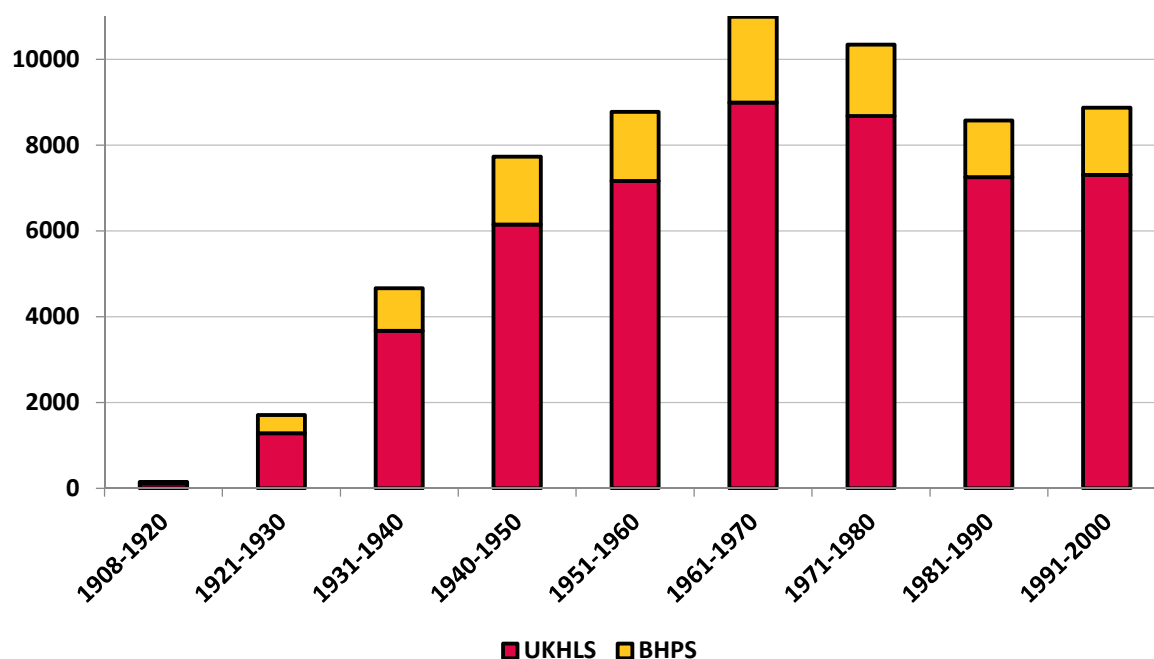
Finally, we present the review of papers that use the Study for cohort analyses in different research areas to illustrate the kinds of research questions that employing a household panel study for cohort analysis enables researchers to address.

3. Results

3.1 Birth cohorts

We discuss separately the cohort coverage of individuals born between 1908 and 2000 (those aged 16 and older by wave 8 and therefore eligible for adult interview), and those born after 2000 (OSM children present in the households in any wave and newborn babies of OSM mothers). Children (and newborns) in households become eligible for an adult interview once they turn 16 and thus the Study sample grows from wave to wave by including the youngest cohorts born after 1992-94 (those who were 16 years old in Wave 1). Figure 1 presents unweighted cohort sizes of nine 10-year birth cohorts born between 1908 and 2000 (61,785 individuals in total; for exact numbers see Table 7 in the Appendix). It covers respondents who have completed an adult questionnaire (age 16 and older) and were present in the Study in at least two out of eight currently released waves. The figure covers only OSMs and PSMs from the General Population Sample (GPS) and Ethnic Minority Boost Sample (EMBS) as well as Immigrant and Ethnic Minority Boost (IEMB) and the BHPS subsample which joined in Wave 2. Ninety-one percent of *Understanding Society* subsample were first interviewed in Wave 1. 89% out of BHPS participants who were followed into *Understanding Society* joined in Wave 2.

Figure 1. Cohort sample size among adult population born between 1908 and 2000

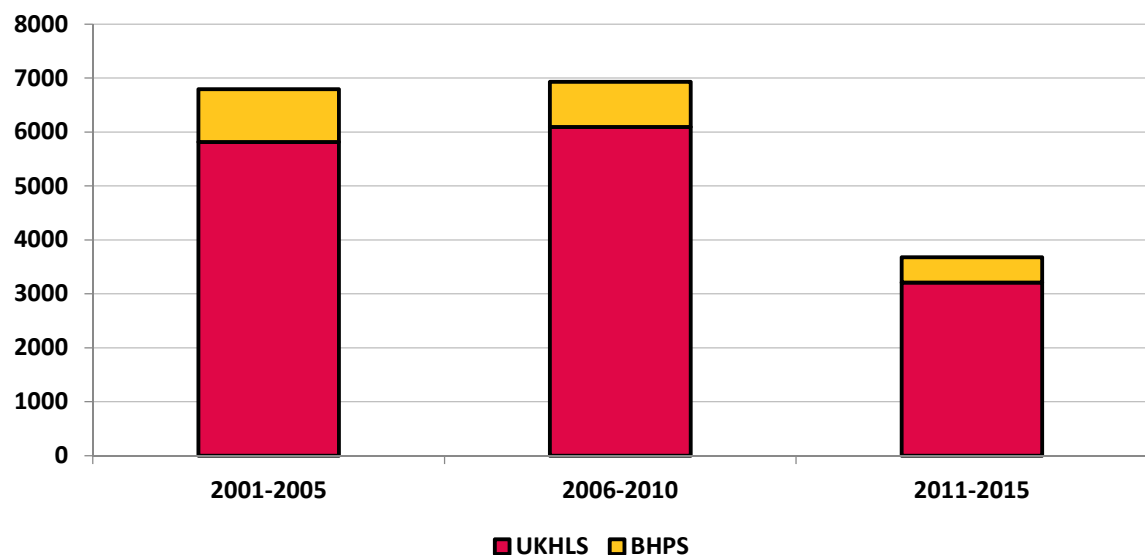


Note: Subsample in red includes General Population Sample (GPS) and Ethnic Minority Boost Sample (EMBS) recruited in 2009-10 as well as Immigrant and Ethnic Minority Boost (IEMB) recruited in 2014-15. Subsample in yellow refers to BHPS participants who joined *Understanding Society* in Wave 2 or later. Only OSMs and PSMs present at least in 2 waves. Total sample size is 61,785.

Figure 2 contains information on 5-year birth cohorts (unweighted) born after 2000 and thus not yet eligible for an adult interview (with a few exceptions of those born in 2001 and interviewed in Wave 8). The total sample includes 17,841 children enumerated in households (*indall*) born between 2000 and 2017 (for exact numbers see Table 8 in the

Appendix). 6,730 children were born 2008-2017 and first observed in household at age 0 or 1, i.e. their life histories could be investigated from birth and linked to various contextual characteristics. The number of babies in the youngest cohort (born 2011-2015) is lower compared to cohorts born 2001-2005 and 2006-2010 as the latter include children already observed in the household by the beginning of the Study, i.e. joined at different ages. The number of children born 2011-2015 is a subject to change as new members will enter the household over the life of the Study.

Figure 2. Cohort sample size of children born after 2000

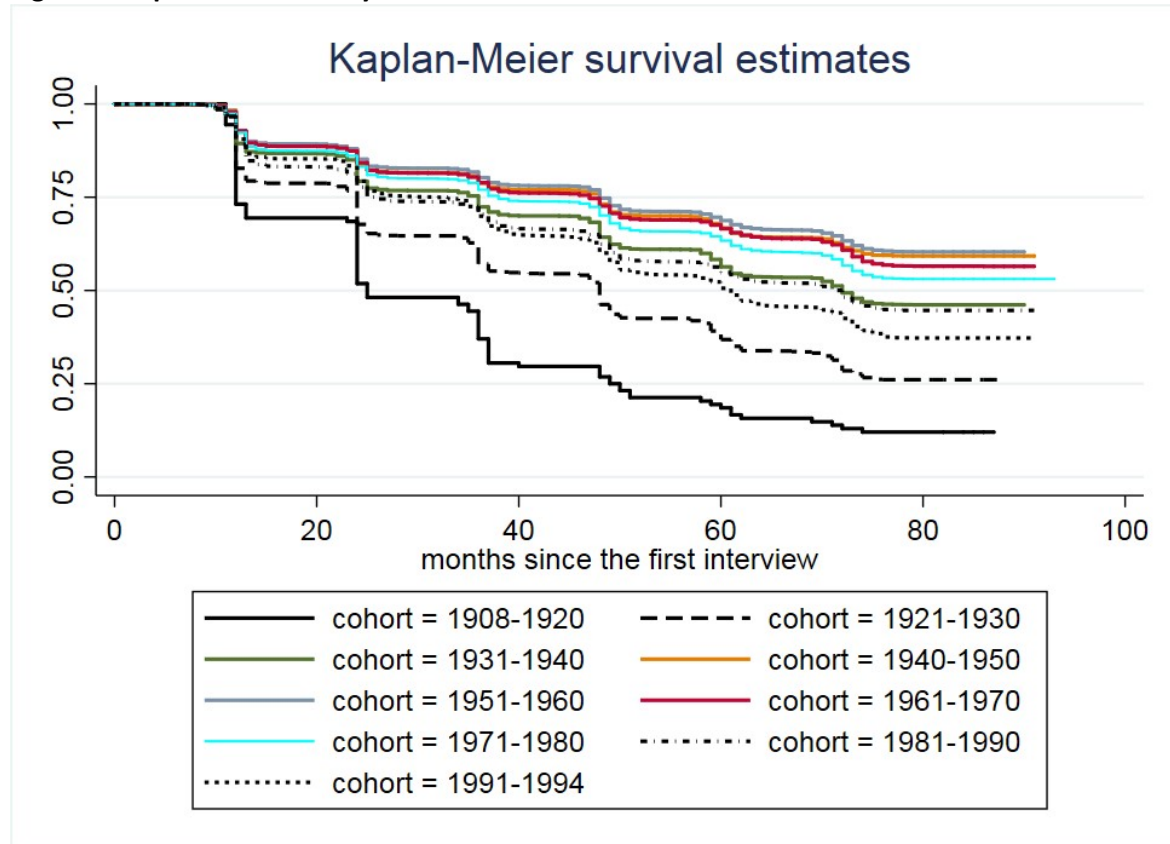


Note: Subsample in red includes UKHLS General Population Sample (GPS), Ethnic Minority Boost Sample (EMBS) recruited in 2009-10 as well as Immigrant and Ethnic Minority Boost (IEMB) recruited in 2014-15. Subsample in yellow refers to BHPS participants who joined UKHLS in Wave 2 or later (or were born to BHPS OSMs mothers who joined in Wave 2 or later). Only OSMs are included in the example. Total sample size is 17,394. Another 447 children were born in 2016-17. Additionally, 2,494 TSM children born 2000-2017 could be included in various analyses depending on researchers' projects.

Next, we analyse for how long adult individuals from different cohorts are present in the Study using the Kaplan-Meier estimator (only GPS and EMBS sample members born between 1908 and 1994 and present in the Study at least in two waves; IEMB sample excluded as could only be present for three waves and thus bias the estimates). The estimates are based on the first and the last wave an individual has completed an adult questionnaire (full or proxy interview), including cases where respondents have missed some waves, but re-joined the Study. The motivation to look at "study survival" rates of an unbalanced panel comes from the fact that for many research questions there is a sufficient amount of information that is collected retrospectively once the respondent is back to the Study (e.g. partnership and economic activity histories). On average, more than half of the sample is still present in the Study at Wave 8. Only OSMs and PSMs are taken into account in the example below. The lowest study survival rates are observed among the oldest cohorts born in 1908-20 (12 persons interviewed in Wave 8 out of 106 present in Wave 1) and 1921-30 (325 persons interviewed in Wave 8 out of 1,233 present in Wave 1). The Study survival rates for these two cohorts go in line with the age-specific mortality rates for the period 2010-2016

(available from Human Mortality Database³). Additional analysis (not shown) has found that 78% of respondents who were interviewed in W8 have not missed a single wave since they joined, with 19% having missed a wave or two in total.

Figure 3. Kaplan-Meier “study survival” curves



Note: Subsample includes UKHLS General Population Sample (GPS) and Ethnic Minority Boost Sample (EMBS) recruited in 2009-10. Only OSMs and PSMs present at least in 2 waves.

³ Average life expectancy for the age groups 80-104 in the UK in the period 2010-2016 (Human Mortality Database, 2019):

80-84	9.03 years
85-89	6.42 years
90-94	4.42 years
95-99	3.05 years
100-104	2.16 years

3.2 Youth sample and rising 16s

This section focuses on discussing younger cohorts born after 1990s who joined the Study as children (including BHPS) and their transition to adult sample. Household members aged 10-15 years are asked to complete a self-completion youth questionnaire which includes a variety of questions regarding own values, hobbies, attitudes and expectations. An advantage of collecting extra data in the Youth Panel is that it opens up opportunities to analyse the current trends in youth attitudes and behaviours and how it is linked to their parents' socio-economic characteristics (e.g. how teenagers' educational aspirations are associated with their own, and their parents' characteristics as shown by Berrington et al. (2016)) or how political partisanship among young people is related to the household composition as shown by Martin and Mellon (2018)), but also to see how their behaviours change over the early life course (e.g. how important factors measured at age 10/11 are in determining mental health at age 14/15 as shown in the Barnardo's report (2018)).

Table 1 presents unweighted sample sizes of children born between 1993 and 2008 who were interviewed at least once in youth questionnaire (11,976 persons) in Waves 1 to 8.

Table 1. Youth Panel sample, Waves 1 to 8

	Number of people	% interviewed at least in 2 waves
first interviewed at age 10	4,820	86
first interviewed at age 11	2,038	82
first interviewed at age 12	1,465	79
first interviewed at age 13	1,378	76
first interviewed at age 14	1,256	65
first interviewed at age 15	1,240	
<hr/>		
Total N of children born 1993-2008 and interviewed at least once in YP	11,976 ⁴	
Out of them:		
7,455 were born 1993-2000;		
4,521 were born 2001-2007		

Note: Subsample includes UKHLS General Population Sample (GPS), Ethnic Minority Boost Sample (EMBS), BHPS as well as Immigrant and Ethnic Minority Boost (IEMB). Only OSMs are included in the example.

Younger cohorts born 1993-2000 (covered in Figure 1) become eligible for their first full-time adult interview at age 16 ('rising 16s') and are one of the main sources of refreshing the sample with new individuals from the most recent birth cohorts. Table 2 contains information about the number of 15 year olds in households across all waves who joined the adult sample after turning 16. On average, between 75% and 89% of 15 year olds in the sample has joined the adult sample after turning 16. Additionally, 98% of those who joined adult sample have been interviewed in the Youth Panel at least once.

⁴ The total number is smaller than an overall sum of figures above by 221 as some children were interviewed twice at the same age in case where annual interview took place within 12 months.

Table 2. 15 year olds at Waves 1 to 6, followed into adult sample by age 18

Wave turned 15	Year of birth	Sample size	Number of people interviewed as adults	Proportion followed into adult sample (%)	Present for at least in 3 waves after joining the adult sample
1	1993-95	1,136	853	75	713
2	1994-96	1,050	861	82	626
3	1995-97	947	821	87	552
4	1996-98	866	771	89	496
5	1997-99	776	626	81	404
6	1998-00	838	663	79	
Total N waves 1-6		6,360	4,595	82	

Note: Subsample includes UKHLS General Population Sample (GPS), Ethnic Minority Boost Sample (EMBS), BHPS as well as Immigrant and Ethnic Minority Boost (IEMB). Only OSMs are included in the example.

Table 9 in the Appendix illustrates the importance of looking into the transition into adult sample beyond the wave young people turn 16. 70% of 15 year olds in Waves 1-6 were interviewed in the next wave. Another 10% have missed the interview at wave they turned 16, but joined the adult sample a year later at age 17. Another 2% have missed the interviews both at waves they turned 16 and 17, but joined the adult sample a year later at age 18. Thus, overall the transition rate to adult sample increases from 70 to 82% when young adults who missed the interview at age 16 are taken into account.

In *Understanding Society*, as in other longitudinal studies, attrition was found to be slightly higher among young people under 30 (Lynn & Borkowska, 2018). There are several ways of looking into attrition depending on the investigator’s research question. Many young people might temporary drop out of the Study considering early adulthood is marked with the occurrence of a rich spectrum of life course events (“turning points”) triggering moves, such as leaving the parental home for education and work, as well partnership formation (Duke-Williams, 2009; Bernard et al., 2014, Champion & Shuttleworth, 2017; Pelikh & Kulu, 2018). Other group of “turning points” such as leaving full-time education, unemployment, or partnership dissolution have contributed to higher rates of “boomeranging” back to the parental home, especially among non-resident young fathers (Berrington & Stone, 2014; Stone et al., 2014) and therefore young people might be back in the Study after missing a few waves. Table 2 (last column) presents the number of 16 year olds present for at least three waves (not necessarily consecutive). Between 60% and 70% of this subsample are present in the Study for at least three waves, with additional analysis (not shown) showing that around 50% appear in five or more waves.

3.2.2 BHPS children

Understanding Society incorporates the BHPS which was carried out between 1991 and 2009 (18 waves), which opens up unique opportunities to recreate complete longitudinal life course trajectories of young adults (collected both prospectively and retrospectively) for more than a 25-year period 1991-2017 as well as to study how early life trajectories and

context influence early and mid-adulthood outcomes (e.g. health outcomes as shown by Booker (2019)). Additionally, the Study design makes it possible to investigate the intergenerational transmission of various behaviours as parental life histories can be linked to their children's. Table 3 presents the number of individuals born between 1976 and 2016 and included in both studies first as a part of household when they were younger than 16 years old. In total 2,820 individuals born between 1976 and 2000 and present in the adult *Understanding Society* sample have been followed since they joined BHPS as children under 16. Another 2,309 young respondents born 2000-2016 have not yet become eligible for an adult interview but have been followed since they first joined BHPS or were born to BHPS parents after the beginning of the *Understanding Society*. Additionally 1,033 of those born 1993-00 were first interviewed at age 16 in *Understanding Society*, out of them 652 could be linked to their households at birth in BHPS, therefore different aspects of their life histories could be investigated from birth and linked to various outcomes in adulthood.

Table 3. BHPS children (under 16 years) followed in *Understanding Society*

Year of birth	Number	Age joined BHPS	First interviewed as adults	Age joined UKHLS
1976-80	342	11-15	BHPS	30-34
1981-90	1,037	10 and younger	BHPS	20-29
1991-00	1,441	10 and younger (born during the life of the BHPS study)	UKHLS**	10-20
Total 1976-00	2,820			
2000-16*	2,309	10 and younger	--	10 and younger
Total 1976-16	5,129			

Note: * with an exception of those born in 1991-92 who could have been interviewed as adults in the last waves of BHPS; ** includes children of BHPS sample members born during the time of the *Understanding Society* study. Only OSMs are included in the sample.

3.3 Event histories

One of the advantages of using *Understanding Society* for investigating various life course trajectories is that it collects information on changes across and between waves (e.g. on the number of jobs changed and changes in the partnership statuses) for all birth cohorts in the same way at the same time. Additionally, economic activity histories were collected in *Understanding Society* Wave 1 (2009-2010) and Wave 5 (2013-2015). Lifetime childbirth, marital and relationship histories were collected in Wave 1 (2009-2010; for the new entrants) and Wave 6 (2014-2016; for IEMB sample). Collecting these histories allows researchers to investigate the incidence, duration and sequences of various life events and roles that form trajectories.

The timing dimension of the life course also reflects how an individual adapts to the societal age norms regarding fulfilling various roles. Traditionally, each society develops its own normative timetables for various stages of life careers (Hogan & Astone, 1986; Neugarten et al., 1965; Riley, 1987; Billari & Liefbroer, 2007). This results in the existence of the so called

“age deadlines”, which prescribe an individual a status of being “too early”, “too late”, or “on time” with their life trajectories, for example, with regards to family formation (Settersten, 2003; Billari et al., 2007). However, these timetables and age norms transform under the influence of new institutional arrangements (Riley, 1987) and can be at best studied using large longitudinal cohort samples. Table 4 presents cohort sample sizes for collected economic activity, partnerships, and fertility histories among UKLHS respondents born between 1908 and 1994. The number of collected histories is smaller than the average cohort sample size (Table 7 in the Appendix) which can be partially explained through the fact that for proxy and BHPS respondents the histories were not collected. According to the current data collection rules, if respondents have missed the wave the histories were collected, they would not be asked to fill out the form once they re-join.

Table 4. Event histories collected retrospectively

Cohort	Economic activity histories	Partnerships histories	Fertility histories
1908-1920	66	141	137
1921-1930	878	1,020	1,330
1931-1940	2,647	1,859	3,492
1940-1950	4,699	2,692	5,631
1951-1960	5,121	3,403	6,074
1961-1970	6,152	4,645	7,838
1971-1980	5,622	3,985	6,832
1981-1990	3,943	3,048	3,021
1991-1994	1,287	307	404
Total	30,415	21,100	34,759

Note: Subsample that covers economic activity histories includes UKHLS General Population Sample (GPS) and Ethnic Minority Boost Sample (EMBS) recruited in 2009-10. Subsample that covers partnership and fertility histories includes additionally IEMB subsample interviewed in Wave 6 when they were first interviewed (in total - 990 partnerships and 2,497 fertility histories collected). Only OSMs and PSMs are included in the samples. Among TSM members 1,586 economic activity histories, 410 partnership, and 508 fertility histories were collected respectively and could be employed in various analyses depending on researchers’ projects.

Tables 5 and 6 present examples of the value of *Understanding Society* for studying the timing of various first transitions of young adults by cohorts (entering the labour market, entering first partnership, and first move). Over the past few decades as a result of various socio-economic changes, such as the expansion of higher education, increase in gender equality and decrease in normative controls, transitions to adulthood in industrialised countries have become de-standardised and individualised, resulting in a larger freedom of lifestyles choices (Shanahan, 2000; Surkyn & Lestaeghe, 2004; Macmillan, 2005; Billari & Liefbroer, 2010). These developments have substantially weakened the social “age deadlines” for the occurrence of specific life events and have led to an emergence of the “biographies of choice” (Huinink, 2013).

Table 5 shows the gradual increase in the median age at entering the labour market by cohort using retrospective economic activity histories from Waves 1 and 5. The increase reflects the economic restructuring and the continuous expansion of higher and further

education in the UK (the higher education participation rate has increased gradually from 12% in 1979 to 30% in the early 1990s, and 49% in 2015 (Department for Education, 2017). Women have entered the labour market later than men among all cohorts. The gender gap has increased among the youngest cohorts as a reflection to the fact that since 1992 women’s higher education participation rate exceeded men’s (Broecke & Hamid, 2008).

Table 5. Median age at entering the labour market* by cohort and gender

Cohort	age started first full-time job	
	Men	Women
1921-1930	15.2	15.3
1931-1940	15.7	16.0
1940-1950	16.3	16.2
1951-1960	17.0	17.0
1961-1970	17.7	18.1
1971-1980	19.3	19.6
1981-1990	19.3	20.2
1991-1994	19.8	20.9

Note: *first full-time job or self-employment spell. Analysis is adjusted for cross-sectional weights from Wave 1 (the sample in the example is restricted to those present in wave 1 and excludes cohort 1908-1920 due to the small sample size. Total sample size= 28,813).

Table 6 presents an example of an increase in the median age at first union among the youngest cohort born between 1974 and 1991. This example illustrates how the combined data from the BHPS and *Understanding Society* can be employed to investigate changes and continuities in life course trajectories of the most recent cohorts about whom little is known, using finer 5-year birth cohorts. The example is based on a sample of persons who reached age 16 between 1991 and 2008 in England and Wales, and for whom data was collected both prospectively and retrospectively to have the most complete information on all life domains. Only respondents who were present at two or more consecutive waves were included. The final sample contains 3,233 individuals from three birth cohorts: 1974–79, 1980–84 and 1985–91, observed between 1991 and 2015 (Wave 6). The results show that the median age at entry into first union among the youngest cohort is approximately one year higher than for the two older cohorts. The data also opens up opportunity to further investigate partnership trajectories (i.e. outcomes of first union and re-partnering as shown by Pelikh et al. (2018).

Table 6. Median age at first union formation by cohort and gender

Cohort	Women	Men	Total
1974–1979	24.3	27.1	25.9
1980–1984	24.2	27.5	26
1985–1991	24.7	–*	26.9
Overall	24.3	27.2	26

Source: Pelikh et al. (2018); BHPS Waves 1–18 and UKHLS Waves 2–6. * Less than 50% of men in the cohort 1985-1991 have experienced the first partnership by the end of the observation window in the analysis.

Using retrospective and prospective economic activity, partnership and fertility histories provides a unique opportunity to create individual longitudinal life histories, which provide much richer information than one-event at a time approach. These trajectories can then be analysed together with behaviours and outcomes created from the annual data, e.g. housing trajectories of people after divorce (Mikolai & Kulu, 2018), smoking trajectories over the life course (Lillard & Christopolou, 2015), employment and earning trajectories of women after birth (Stewart, 2014; Harkness et al. (forthcoming)), unemployment trajectories and health (Hughes & Kumari, 2017).

4. Literature review themes

In this section, we present the results of the literature review of papers that use the Study for cohort analyses in different research areas. We have identified around 30 research papers and reports where the concept of cohorts played a central role in the analyses performed. The identified themes could be summarised as follows:

- families and fertility (fertility analysis by birth order, ethnicity, education, analysis of childlessness, union formation and dissolution, LATs, divorce and separation, mixed marriages)
- health & ageing;
- well-being and life satisfaction;
- caregiving, population projections;
- political engagement and partisanship;
- social inequality and stratification;
- residential change and internal migration;
- employment trajectories;
- education;
- methodological papers

By collecting the data on all household members (in particular on children and their parents) and following them for the life of the Study, a number of papers use the data to investigate intergenerational transmission of various behaviours listed above (for example employment trajectories or fertility).

Some papers use a combination of different data sources, e.g. birth cohort studies National Child Development Study (cohort born 1958); 1970 British Cohort Study; and the Millennium Cohort Study (cohort born 2000) and *Understanding Society*. Thus, *Understanding Society* data extends our knowledge of societal changes obtained from investigating the birth cohorts studies and opens up an opportunity to investigate both intra- and inter-cohort changes over the life course. Additionally, *Understanding Society* allows to look into various life course developments of the most recent cohorts of young adults which are not captured in other studies.

One of the largest advantages of the Study is that it follows a large sample of individuals and collects data annually in the same way. Therefore, it opens up opportunity to recreate longitudinal panel series on a variety of topics from an age-period-cohort perspective (e.g. well-being and mental health, smoking trajectories, changes in values and beliefs). The notion of cohort itself could thus be transformed into event-cohorts, i.e. comparing partnerships formed in 1980s and 1990s, or comparing cohorts of individuals who entered their jobs before and after the economic recession. Moreover, using geographical data

allows linking the Study to various administrative resources and provides ground for more granular period analyses (for example linking to regional levels of economic development, unemployment, housing prices).

Additionally, *Understanding Society* is frequently used as a main source representing UK for cross-national comparisons (i.e. transition to home ownership, fertility and partnerships trajectories among ethnic minorities; papers listed in the references).

5. Conclusions and recommendations

This report highlights the value of *Understanding Society* for birth cohort research. The Study opens up opportunities to move beyond single transitions and focus on life course trajectories instead in order to present a holistic picture of the continuities and changes in the society across cohorts and generations. An overall sample size of 61,785 individuals aged 16 and older born between 1908 and 2000 and followed in the Study for at least two waves provides a rigorous platform from both intra- and inter-cohort comparisons in various research fields. Another 17,394 children born after 2000 and not yet eligible for adult interview will remain potential eligible sample members for the life of the Study.

Several possible recommendations stem from this report. First, collecting more information on what was happening in respondents' lives if one or more waves were missing could help following the life course in more detail and open up opportunities for new research agenda. Following the first recommendation, if more information was collected once the respondent re-joins the sample, the two missing wave rule after which respondents stop being followed in the Study could be rethought and so the panel attrition could be reduced keeping the sample size bigger. For recent birth cohorts, approximately 80% answer the adult questionnaire after they turn 16 (Waves 1-6), only 50% are in the Study for at least five waves once they join the adult sample (out of those turned 16 in Waves 1-3). The value to research of these participants who are in the Study as children and transition to adults is immense. So the third recommendation suggests that keeping young people in the Study over multiple waves in early adulthood is challenging and it should be a high priority to improve this, as well as recognising this highly mobile period of life and encouraging them to re-join the Study after a few years, and collect retrospective information to fill in the gaps in early histories. The last recommendation refers to the rules the retrospective event histories are currently collected. Including an opportunity to collect more data from respondents who missed the waves the histories were collected could help fill in the gaps in the missing events to create the full life course trajectories. In the same manner, more life histories, i.e. geographical mobility and housing, could be collected retrospectively as well.

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Appendix

Table 7. Cohort sample size among adult population born between 1908 and 2000

	UKHLS	BHPS	Total
1908-1920	108	36	144
1921-1930	1,279	427	1,706
1931-1940	3,671	993	4,664
1940-1950	6,147	1,582	7,729
1951-1960	7,158	1,617	8,775
1961-1970	8,987	2,002	10,989
1971-1980	8,675	1,662	10,337
1981-1990	7,250	1,320	8,570
1991-2000	7,304	1,567	8,871
Total	50,579	11,206	61,785

Note: UKHLS sample includes General Population Sample (GPS) and Ethnic Minority Boost Sample (EMBS) recruited in 2009-10 as well as Immigrant and Ethnic Minority Boost recruited in 2014-15. Only OSMs and PSMs present at least in 2 waves of UKHLS. Total sample size is 61,785.

Table 8. Cohort sample size of children born after 2000

	UKHLS	BHPS	total
2001-2005	5,813	978	6,791
2006-2010	6,090	839	6,929
2011-2015	3,210	464	3,674
Total	15,113	2,281	17,394

Note: UKHLS sample includes General Population Sample (GPS), Ethnic Minority Boost Sample (EMBS) recruited in 2009-10 as well as Immigrant and Ethnic Minority Boost recruited in 2014-15. BHPS subsample includes participants who joined UKHLS in Wave 2 or later (or were born to BHPS OSMS mothers who joined in wave 2 or later). Only OSMs are included in the example. Total sample size is 17,394. Another 447 children were born in 2016-17.

Table 9 15 year olds at Waves 1 to 6, followed into adult sample by age 16, 17, 18

Wave turned 15	Year of birth	Sample size	Number of people interviewed at age 16	Number of people interviewed at age 17 if missed the interview at age 16	Number of people interviewed at age 18 if missed the interview at age 16 and 17
1	1993-95	1,136	743	78	24
2	1994-96	1,050	736	92	19
3	1995-97	947	700	94	18
4	1996-98	866	667	87	10
5	1997-99	776	524	82	20
6	1998-00	838	577	86	
Total N waves 1-6		5,613	3,947	519	91
% of Total			70	80	82

Note: Subsample includes UKHLS General Population Sample (GPS), Ethnic Minority Boost Sample (EMBS), BHPS as well as Immigrant and Ethnic Minority Boost (IEMB). Only OSMs are included in the example.