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The design and content of the HALCyon qualitative study

A qualitative sub-study of the National Study of Health and
Development and the Hertfordshire Cohort Study

Jane Elliott
Catharine Gale
Diana Kuh
Sam Parsons

CLS Cohort Studies
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Abstract

This paper provides an overview of the design of a qualitative sub-study of 30 members of the 1946 British birth cohort study, known as the Medical Research Council (MRC) National Survey of Health and Development (NSHD), and 30 members of the older Hertfordshire Cohort Study (HCS) who were born between 1931 and 1939. Interviews were carried out in 2010 as part of the Healthy Ageing across the Life Course (HALCyon) collaborative research programme¹. The central objective of this part of the research programme was to use qualitative in-depth biographical interviews to help understand how an individual's self-reported physical capability impacts on their health, wellbeing and social interaction. In this descriptive methodological paper, we focus on the content of the interview topic guide, our sampling strategy and on the characteristics of the sample that was achieved in comparison with the overall survey population. Descriptive summary statistics and brief examples of responses to key questions are included.

Key Words: cohort, longitudinal, mixed-methods

¹ For further information see www.halcyon.ac.uk.

Introduction

There are eight different research strands within the Healthy Ageing across the Life Course (HALCyon) collaborative research programme. Each strand investigates how individual factors (such as early development, lifetime health, personality and nutrition), and characteristics of areas in which study members have lived influence a particular indicator of healthy ageing. Few studies have used qualitative methods to study capability or wellbeing, yet a focus on subjective experiences and beliefs can provide insights that cannot be obtained by quantitative methods alone.

The 'Life history and healthy ageing' work package within HALCyon carried out qualitative interviews with 30 members of the 1946 British birth cohort study, known as the Medical Research Council (MRC) National Study of Health and Development (NSHD), and 30 members of the older Hertfordshire Cohort Study (HCS) who were born between 1931 and 1939. The information collected complemented that given by 170 members of the 1958 birth cohort study, the National Child Development Study (NCDS), in an earlier qualitative sub-study carried out from 2008 to 2010 (Elliott et al., 2010), and creates an invaluable resource for both qualitative and quantitative researchers. There is currently much interest in the methodological challenges when linking quantitative and qualitative data (see Elliott 2005; Bryman 2006a, b, c), but there are little suitable data that might permit effective linkage. The project based on NCDS cohort members represented the first attempt to interview members of a national, longitudinal cohort study in depth, with the possibility of linking such biographical narratives to structured survey data collected throughout the life course. The HALCyon research builds on this resource, providing opportunities for such data linkage for respondents in two other longitudinal surveys. Much of the interview schedule is based on the one used in the earlier project so that cross-cohort comparisons can be made using responses to questions from men and women in their 50s, 60s and 70s.

This paper begins with a brief summary of the NSHD and HCS, followed by a more detailed discussion of the substantive focus and methodological aspects of the qualitative sub-study. The next section describes the development of the topic guide. The third section focuses on the sample selection procedures, response rates, what influences agreement to participate in the study and representativeness of the qualitative samples in relation to the overall study population. The fourth section provides descriptive summary statistics and examples of responses to key questions together with a case study, constructed from both quantitative and qualitative information.

Background to the studies

National Study of Health and Development

The NSHD, also known as the 1946 British birth cohort study, was the first of the national birth cohort studies. The sample was drawn from the first national maternity survey of all the babies born in one week in March 1946 in England, Wales and Scotland, which was undertaken to learn about the social and economic costs of childbearing. Funding was secured to follow up 5,362 of the single legitimate babies, on more than 20 occasions over their life so far. The focus of the study has shifted to reflect the life course stage of the study members. During childhood, the main aim was to investigate how the environment at home and at school affected physical and mental development and educational attainment. During adulthood, the main aim was to investigate how child health and development and lifetime social circumstances affected adult health and function and how these change with age. Now, as respondents reach retirement, the research team is developing the NSHD into a life course study of ageing. More than 3,000 participated in the survey in 1999 at age 53. For more information on the NSHD, see Wadsworth et al. (2006)² and the updated profile outlining the most recent data collection at age 60 to 64 years (Kuh et al. 2011).

Hertfordshire Cohort Study

The Hertfordshire Cohort Study (HCS) is part of a group of unique studies of men and women born in the English county of Hertfordshire between 1931 and 1939. Details on these people's birthweight, early growth and health had been recorded by health visitors as part of a scheme originally set up by Miss Ethel Margaret Burnside in an attempt to improve the survival of infants in the county. In 1998-2004, men and women born in Hertfordshire between 1931 and 1939 still living in the county were recruited to take part in a cohort study to evaluate interactions between the genome, the intrauterine and early postnatal environment, and adult lifestyle in the aetiology of chronic disorders of later life. A description of the setting up of the HCS has been published previously (Syddall et al. 2005). Of 6,099 people invited to take part in the initial survey, 3,225 (53 per cent) agreed to be interviewed. In 2008-9, surviving participants were invited to take part in a postal survey. Of 2,689 people approached, 1,417 (53 per cent) returned a completed questionnaire to measure how happy or satisfied they were with their lives, and provide new information about factors that may affect wellbeing.

² For further details on response rates see http://www.nshd.mrc.ac.uk/data/response_rates.aspx.

Background to the qualitative sub-study

As highlighted above, this qualitative sub-study of the NSHD and the HCS built on earlier research involving interviews with 170 members of the 1958 birth cohort when they were age 50. Those interviews focused primarily on the substantive area of social participation, social integration and identity. The topic guide for the in-depth qualitative interviews was developed with six main parts:

- 1) neighbourhood and belonging
- 2) leisure activities and social participation
- 3) personal communities
- 4) life history
- 5) identity (and perspectives on ageing)
- 6) reflections on being part of the NSHD or HCS.

While these sections of the guide deal with ostensibly separate themes, in practice a good degree of overlap and cross-referencing occurred during interviews. The core elements of this topic guide were kept intact for the HALCyon interviews, but additional questions on health, diet and ageing were included to complement and enrich the quantitative research being carried out within the wider HALCyon research programme. As such, some questions on participation and aspects of identity were dropped to keep the interview a reasonable length. The interviews were conducted on the basis of a semi-structured topic guide, which in its final configuration contained 19 (61 per cent) of the original 31 questions and 15 new ones. The content of the topic guide is now discussed in further detail.

Amending and piloting the topic guide

The revised topic guide was developed between September and December 2009. It was tested in the field in four pilot interviews with respondents of similar age to participants in NSHD and HCS in January 2010. Two members of the research team were involved in this process, carrying out two interviews each, with all members of the core team critically reading all four transcripts. This resulted in a thorough account of how well the amended parts of the draft guide had worked and where further revision was needed. The pilot interviews resulted in some minor modifications to the new questions included in the draft guide. To assist in the collection of consistent data across interviews, 'must-use' words or compulsory phrases were highlighted in **bold** in the topic guide. Other questions could be paraphrased or reworded to help build rapport and make the interview as natural and conversational as possible. The final topic guide is included in the Appendix.

The first section of the topic guide, on **neighbourhood and belonging**, is designed to tap participation and involvement in neighbourhood activities and establish their significance to the cohort member. It is placed first to help put respondents at ease, as the questions are not threatening and usually evoke reflective responses, and to locate the cohort members in terms of their housing and migration histories. Individuals are also asked about the quality and distance of the local shops and about other facilities near to their homes.

The aim of the second section on **leisure activities and social participation** was to encourage respondents to define and describe participation in their own terms, rather than by any established criteria or predetermined definition of what social and cultural participation might comprise. This relates to our interest in the nature and significance of everyday or mundane engagements and associations, which are often excluded from view in 'official' accounts of civic and cultural participation (Bennett et al. 2009). Respondents were asked to recall and explain what spare time activities they had engaged in over the past week and weekend and how typical that pattern was. If not mentioned, they were then asked about more formal, organised types of participation. Respondents were specifically asked about regularity of physical exercise (both now and as a younger adult), whether they had somewhere to play outside as a child, and what memories they had of rationing.

The section on **friendships** was included to ensure that we have detailed information on informal social ties and networks to set alongside more formal involvements. It was adapted from Spencer and Pahl (2006), who were interested in developing understanding of personal communities as sites for the production and articulation of social capital. It begins with respondents being asked to map their friendships on a ring diagram, placing each person in relation to the centre of the diagram according to their importance. This exercise was partly introduced at this point to help break up the interview. The experience of the pilots confirmed the usefulness of this timing and of the information it provided. Cohort members were encouraged to discuss the process as they went about filling in the diagram. They were then asked a series of questions about their relationship to the people they had included and the significance it held for them.

Respondents were then asked a two part 'locating' question about personal relationships: which member of their personal communities did they rely on most for emotional support and was there anyone they felt relied on them for emotional support.

Section 4 gave respondents up to half an hour to recount their **life story** as they see it. This is set up in the form of an open and unformatted invitation to see both how people construct an account of their life course and the specific detail they include. Each provides points of reference and comparison with the respondents' profile and their life trajectories as represented in the main waves of data collection. Here the idea is to distil and locate, socially and culturally, the types of stories being told: active or passive accounts survival or achievement narratives, and so on. Only if after ten minutes or so, respondents really struggle to give any kind of account, does the interviewer revert to asking a series of questions (prompts) about specific periods of the respondent's life. Interviewers were asked, in particular, to encourage respondents to elaborate about the impact of any dramatic, life changing or sensitive issues that were raised, such as moments of personal and family crisis. In a similar vein, interviewers were asked to draw respondents out more on the meanings and interpretation behind very brief responses.

Having completed their accounts, respondents were then asked to identify the key influences and turning points in their lives. The section ends with a second practical exercise, in which they are asked to choose which from a series of 'life diagrams' (taken from Ville and Guérin-Pace [2005]) that which best represents their own trajectories, or if none are applicable, to draw one of their own. This section provided some very rich accounts, providing examples of how a sample of older adults view their lives retrospectively.

Section 5, on **identities**, began by asking respondents whether they felt they belonged to a social class and whether they felt they belonged to a particular generation. In a further reference to age, and wishing to provide a link to the original health-related concerns of the surveys, we also asked about the benefits and drawbacks of being their age. Further questions about health and lifestyle included self-rated health, importance of good/poor health in life, views on why some people are healthier than others and what the respondent does that is beneficial – or not – for their health.

The final section of the topic guide asked about **membership of the NSHD or HCS**. In many ways this was the least problematic of the sections to design because one of its main aims was to understand the experience of being in the study and to provide an opportunity to feed back on how this might be improved in the future. A further aspect of this section concerned the development of questions around the 'Hawthorne Effect' (Landsberger 1958). In other words, it tried to distil how far membership in the study itself might have affected cohort members' sense of self-identity and whether this might in turn be impacting on the way they behave and respond as participants. Clearly this is more likely in the case of members of the NSHD, as they have been contacted repeatedly through their lives, whereas members of the HCS have been invited to take part in only a few surveys since they were recruited to the study in later life.

Sample design

The use of existing longitudinal studies as the basis for a qualitative study of a sub-sample of respondents provides the potential for sophisticated stratified or theoretical sampling based on known characteristics of the target sample. However, there is a tension between constructing a very specific sample for a narrowly specified substantive topic, and the need to produce data from a broadly representative range of respondents that can then form a resource for subsequent analysis. To meet the central aims of the project, the NSHD sample was stratified on geographic location and self-reported physical capability, the capacity to undertake the physical tasks of daily living. The HCS sample was stratified purely on self-reported physical capability as all members lived in Hertfordshire. The aim was to interview 30 cohort members in each study, 10 with 'good' capability, 10 with 'average' capability and 10 interviews with 'poor' capability, as well as achieve a balance between men and women. In NSHD the 30 respondents were split equally between two geographic regions across Great Britain: the South East of England and the Central Belt of Scotland. These were chosen to match up with two of the geographic locations where NCDS cohort members had been interviewed and also because respondents living in these locations had recently returned a self-completion questionnaire that contained the physical capability questions and attended a clinic for a full physical assessment. To minimise respondent burden, cohort members were only invited for an interview if their clinic visits had taken place at least six months prior. The HCS members had returned self-completion 'wellbeing' questionnaires which included the physical capability questions in 2009.

Interviewer characteristics

The project team used the same interviewer protocols and guidelines developed in the original NCDS study for dealing with disclosures or other potentially uncomfortable or difficult situations in an interview. The interviews were carried out by three interviewers. One female interviewer was in her forties and part of the HALCyon team and the other was in her fifties and was recruited specifically to conduct the qualitative interviews. They had each previously carried out circa 30 of the qualitative interviews with NCDS cohort members. The male interviewer was in his thirties and carried out two interviews with the older HCS as part of his PhD. A considerable body of literature on the impact of interviewer characteristics on research interviews has been published from as far back as the 1950s and it is beyond the scope of this paper to discuss this in detail. A selection of publications is included in the references for further reading (Campanelli and O'Muircheartaigh 1999; Groves and Couper 1998; Hanso, 1958; Laurie et al. 1999; Pickery et al. 2001; Schnell and Kreuter 2005).

Timing and length of interviews

All interviews were carried out during 2010: the HCS interviews between 22 March and 13 September, and the NSHD interviews between 20 April and 13 May (Scotland) and 15 June and 24 August (South East). The average length of interview was longer than the 90 minutes scheduled. In NSHD, the interviews took an average of two hours and five minutes (ranging from 55 minutes to three hours and 18 minutes), and in HCS an average of one hour and 57 minutes (ranging from 57 minutes to four hours and 34 minutes). In NSHD, men spoke for

an average of 15 minutes longer than women and those with poor capability spoke for an average of 20 minutes longer than those with average or good capability. There were no differences by gender or capability among HCS respondents.

Physical capability

Physical capability was measured across six comparable questions in each study. The six questions were part of the SF36 (Ware et al. 1993) in NSHD and the Townsend scale (Townsend, 1979) in HCS. Both sets of questions were part of a self-completion questionnaire carried out in 2008-9 in HCS and 2009-10 in NSHD. Respondents were asked to indicate how able they were to carry out typical daily activities using three response categories. Table 1 gives the categories and specific activities included in the measure of physical capability.

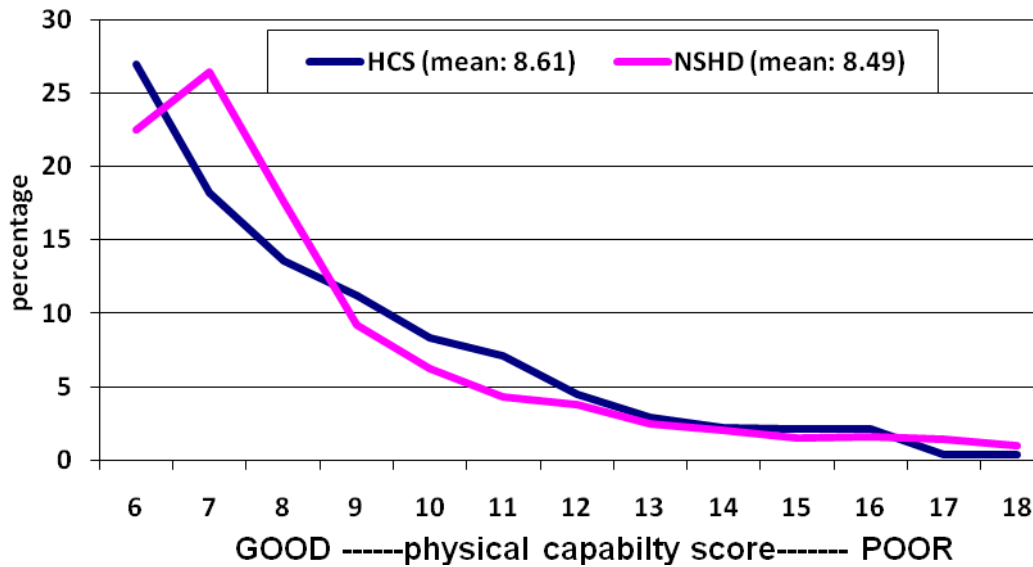
Table 1: Physical capability questions

NSHD (questions part of SF36)	HCS (questions from Townsend scale)
<ol style="list-style-type: none"> 1. No, not limited at all 2. Yes, limited a little 3. Yes, limited a lot 	<ol style="list-style-type: none"> 1. No difficulty 2. Yes, some difficulty 3. Yes, unable to do alone
<ul style="list-style-type: none"> • Bathing and dressing yourself • Bending, kneeling or stooping (similar to cutting toe nails) • Moderate activities (moving a table, pushing a vacuum cleaner, bowling or playing golf) • Vigorous activities such as running, lifting heavy objects, participating in strenuous sports • Climbing one flight of stairs • Lifting or carrying groceries 	<ul style="list-style-type: none"> • Washing down • Cutting toe nails • Doing heavy housework • Running to catch a bus • Going up or down stairs • Going shopping and carrying a full basket in each hand

Scores ranged between 6 and 18, with a high score indicating poor capability. Figure 1 shows that for the main sample of respondents with complete information in both cohorts (n=2,253 NSHD³; n=1,416 HCS), physical capability was very much skewed towards 'good' capability. The distribution of scores were split into quartiles, with scores in the bottom (6) and top (11-18) quartile indicating 'good' and 'poor' capability respectively. Cohort members with scores in the middle two quartiles (7-10) were classified as having 'average' capability. Eligible participants for the qualitative study were selected from within these capability groups.

³ This number is limited to the NSHD participants who have been recently interviewed and had their information coded at the time of writing. The data entry process is currently ongoing.

Figure 1: Distribution of overall physical capability score in NSHD and HCS



Achieved sample

The overall response rate in the qualitative sub-study was 61.9 per cent: 97 cohort members were contacted and 60 interviews were completed. A total of 16 cohort members (16.5 per cent) refused (including some who initially agreed but then cancelled or were not in at the time of interview), 19 (19.6 per cent) did not reply to the initial letter of invitation and two (2.1 per cent) wanted to take part but were not available during the fieldwork timetable. Table 2 shows that the response rate was slightly higher among NSHD members⁴, with HCS members being more likely to refuse rather than not reply to the initial letter. A good gender balance was achieved in the final qualitative sample, with 30 men and 30 women interviewed. There was a similar overall response rate for men and women (62.5 per cent men, 61.2 per cent women), but non-response was higher among men (25 per cent to 14.3 per cent women) and refusal was higher among women (10.4 per cent men, 22.4 per cent women).

⁴ Although slightly higher in NSHD than in HCS, the NSHD response rate was far lower than usual. This may have had something to do with the type of interview requested, but it was more likely due to 'respondent burden'. Study members may well have thought that they had recently contributed a lot to the study having already completed questionnaires and travelled (up to 100 miles) for a five-hour clinic visit at the end of 2009 or early 2010 (Kuh, 2011).

Table 2: Interview outcomes by cohort and gender

	NSHD			HCS		
	Men	Women	All	Men	Women	All
Interviewed	72.7%	58.3%	65.2%	53.8%	64.0%	58.8%
Refused	4.5%	16.7%	10.9%	15.4%	28.0%	21.6%
Non-response	22.7%	20.8%	21.7%	26.9%	8.0%	17.6%
Other	0%	4.2%	2.2%	3.8%	0%	2.0%
<i>N (100%)</i>	22	24	46	26	25	51

An equal split by capability was achieved in the HCS sample, with 10 interviews being carried out in each capability group. There was a bias towards ‘good’ capability in the NSHD sample (6 poor, 12 average, 12 good), which reflected a higher non-response rate among those with ‘poor capability’ and the reduced numbers with ‘poor’ capability available for selection⁵. Table 3 shows that overall response rates were lowest among those with ‘poor’ capability (53.4 per cent), which were also the most likely not to respond. Non-participation among those with ‘average’ or ‘good’ capability was more likely to be refusal rather than non-response. In terms of overall participation levels, neither gender nor capability was significantly associated with participation in the qualitative study. Small numbers restricted any meaningful analyses by cohort and the different demographic profiles of the two studies further restricted inclusion of other variables (e.g. education, social class) into analyses predicting participation in the sub-study. (A demographic profile of respondents who did and did not participate in the study is included in Appendix 2)

Table 3: Interview outcomes by physical capability

	Both cohorts			
	good	average	poor	all
Interviewed	62.2%	68.8%	53.6%	61.9%
Refused	21.6%	18.8%	7.1%	16.5%
Non-response	13.5%	12.5%	35.7%	19.6%
Other	2.7%	0%	3.6%	2.1%
<i>N (100%)</i>	37	32	28	97

Representativeness of sub-study sample

When carrying out a qualitative sub-study of two large-scale longitudinal cohort studies, it is important to consider the characteristics of the qualitative sub-sample in terms of how closely the sub-sample resembles the cohort as a whole. A detailed profile of the sample who took part in the qualitative study in comparison with the two respective cohorts as a whole, (or more specifically the sample of cohort members for whom a capability score was available), is provided in Table 4. Although the small sample sizes need to be taken into consideration, the percentages show that the qualitative sub-study sample was broadly representative of the larger sample it was drawn from.

⁵ Only cohort members who had been able to make the journey to a clinic for an assessment rather than have a home visit were available at the time the sample was drawn.

Table 4: Profile of the qualitative samples in comparison with the main cohorts

	NSHD (age 64)*		HCS (age 75)*	
	Qualitative sub-study	All	Qualitative sub-study	All
% male	53.3%	56.8%	46.7%	50.8%
% I or II social class	50.0%	47.7%	31.0%	35.1%
% non-manual occupation	82.1%	71.5%	48.2%	47.3%
% own home	96.6%	90.5%	83.3%	83.6%
% single, never married	3.4%	4.5%	3.3%	4.1%
% separated / divorced	10.3%	11.5%	0%	5.3%
% post 16 education	70.0%	55.5%	43.3%	36.6%
% post 18 education	30.0%	24.0%	3.3%	6.4%
% good capability	43.3%	22.5%	33.3%	27.1%
% poor capability	16.7%	24.3%	33.3%	22.0%
Mean wellbeing score***	54.3	51.3	50.7	51.7
% father non-man occupation	51.7%	46.5%	20.6%	18.6%
<i>n</i> =	30	(2001-2253)**	30	(1368-1416)**

*average age when interviewed for the qualitative study

**restricted to all respondents in main survey with a capability score, i.e. sample sub-study members drawn from.

***Warwick-Edinburgh Mental Wellbeing Scale, score range 14 to 70 with a high score indicating better wellbeing. Only n=233 in NSHD had responses to the 14 questions that make up the scale coded up by December 2010.

Overview of findings from preliminary analyses

The aim of the qualitative, biographical, interviews is to help us understand more about capability, wellbeing and ageing from an individual or lay perspective. Some of the main research questions that will be addressed in subsequent papers include:

What do older people mean when they provide a self-report that they have good or poor physical health in a quantitative survey?

- a) What do individuals feel are the main advantages and disadvantages of being the age that they are?
- b) What are the factors that individuals identify as having a negative impact on their health and to what extent do they feel responsible for their own health?
- c) What are some of the key factors over the life course that individuals believe have had an impact on their health?

To demonstrate the nature of the information collected, two different analytic approaches are adopted here. First some preliminary thematic analysis of responses to specific questions has been carried out across all transcripts. We report the key themes that emerged from analyses or responses to the questions '*Compared with someone the same age as you would you say that your health is (Excellent, very good, fair, poor, very poor). What goes through your mind when you say that?*' and '*Why do you think some people healthier than others?*' Responses to the two visual exercises completed during the interview with summaries across all cases are also discussed. Second, we present an in-depth case study of a respondent with poor self-reported capability, making use of both qualitative and quantitative data. This case-based approach complements the thematic, cross-case approach.

Self-rated health

The majority of respondents (46 out of 60) spoke about their health in positive terms during the interview and categorised it as either 'very good', 'good' or 'pretty good'. Phrases including 'healthy', 'above average', and 'not too bad for my age' were also used. Nine rated their health as 'excellent': '*Oh, it's got to be excellent.....Well, I just feel well. [Laughs]. I haven't got any problems, no health problems*' (H016), and just two thought their health was 'poor' and one thought it was 'fair'. Half of the HCS members rated their health as excellent or very good compared with a third of NSHD members, despite this sample having a higher mean age. Men used terms such as 'good' or 'pretty good' most often (63 per cent); whereas women were more likely to use terms such as 'excellent' or 'very good' (50 per cent). The relationship between previously self-reported capability and self-reported health status was as expected, with more of those with good capability reporting to be in 'excellent' or 'very good' health (14 out of 22), compared with those with average (8 out of 22) or poor (3 out of 16) capability.

A positive attitude to health was apparent within many accounts, even when serious health problems had been experienced. Respondents tended to emphasise what they can still do rather than what they cannot:

'I have to recognise that I've had a quadruple heart bypass, I wouldn't recommend that to anybody but if I hadn't have had it I wouldn't be here now. I am limited in what I can do in as much that I can't go for long walks that I used to go for, but I can still go out on my bike, and I shall almost certainly be out on my bike this evening as well.' (H025)

However, if health problems have not been overcome and have a lasting impact, then health was reported more negatively: *'...I'll say it's poor because of what I've got....If I didn't have what I've got, I would say that my health would have been tip top'* (D001). In these cases, the impact of poor health was plain to see: *'I can't sit up, and I couldn't get out the bath. I used to love a bath,... I'd love to lay in lovely warm water, you know, just to ease my poor old body, 'cause it don't feel like my body anymore'* (H020).

There was a recognition among cohort members that with age comes certain limitations, but that they could still do what they wanted to do because they are or feel in good health: *'...I would say, yeah, health wise, very good. I mean, there's nothing really within sensible reason that I can't do at all'* (H006). This was often reported with humour:

'I mean I read the Mercury every week, our local paper to see who's died [laughs]....I'm not there yet. I mean [laughs], the bones seize up in your knees and that, I still--, I can't play football no more or badminton, you know, I can play pool, still play pool' (H009).

Respondents also spoke of an element of fortune or 'luck' around health, whether they had experienced 'good' or 'bad' luck when they compared against others that they know: *'I can still run up the stairs. I can still do things physically. I don't walk with a limp. I don't have a heart problem.... I've been very fortunate from that point of view. I've not deteriorated as badly as some people of my age have'* (D012), or *'I'm aware that I'm pretty lucky really in as much as I'm still going all right'* (H027), and contrastingly *'I'm a very unfortunate 76 year-old, 'cause I've had so much go wrong with me'* (H019).

The interviews provide an opportunity to look in detail at the life stories of respondents who have good or poor health, and also to relate this to their quantitatively recorded capability scores. Those whose self-reported capability is poor but who report good health are perhaps of particular interest.

Why are some individuals healthier than others?

In response to the question *'Why do you think some people healthier than others?'*, many cohort members (42 out of 60) mentioned specific lifestyle factors that can lead to poor health, in particular diet and smoking (29 and 21 respectively), but also drinking and lack of exercise (16 and 16). In many cases cohort members mentioned more than one lifestyle factor and demonstrated awareness that there are many contributing factors that can lead to poor health. As one woman in the Hertfordshire cohort said:

'Well, some people are born--, are prone to have things that are unfortunate, like diabetes and things that--, unfortunate horrible things that happen to them, and they can't help it, and then there are the others that have eaten all the pies really and do drink too much and don't do any exercise at all, which was me ten years

ago, and I would still stay in bed with a coffee and a fag and stay there until lunchtime given the opportunity. (H018)

In contrast it is interesting to note that relatively few respondents mentioned poverty (or affluence) as a cause of poor health, or related health to environmental factors. Only four respondents mentioned poverty as a cause of poor health and only six individuals mentioned environmental factors. Those who did talk about poverty gave some very descriptive accounts of living conditions that they believed had an impact on health. For example as one man from the 1946 cohort who lived in Scotland explained:

'I think the biggest killer for me, going back to my generation to when I was--, to when I was younger, I think the biggest problems were socially, you know, where--, your living conditions and stuff like that could probably contribute later on in life to--, I was fortunate, we had an indoor toilet--, we didn't have a bath or anything like that but there was an indoor toilet and stuff like that in the building that we were in. The people who had to go to outhouses, you know, in all kinds of freezing cold weather and stuff like that must have been--, and some areas where, to be quite honest, they were rat infested and stuff like that. I never came from an area like that, the area I came from, the tenements were pretty good, they were kept pretty clean, you know, and so I think that contributes.' (D014)

There was also a wide appreciation that genetics or heredity play a part in determining health, with nearly half of cohort members interviewed mentioning this (27 out of 60). For example: *'Oh there's a lot of genetic reasons, I mean some things run in the family.'* (D016) or *'I think partly it's just in your genes I imagine, you know, you're either gonna be lucky or unlucky* (D022).

Two thirds of those who mentioned genetics or heredity as explaining why some people are less healthy than others also mentioned lifestyle factors (18 out of 27). As was commented on above, many respondents mentioned several factors that can contribute to health inequalities between individuals. It will also be interesting to examine in more detail the responses from those who didn't mention either genetics or lifestyle factors. There were only a handful of these, and preliminary investigation suggests that a theme among these responses is that health can't be explained and it is just down to luck.

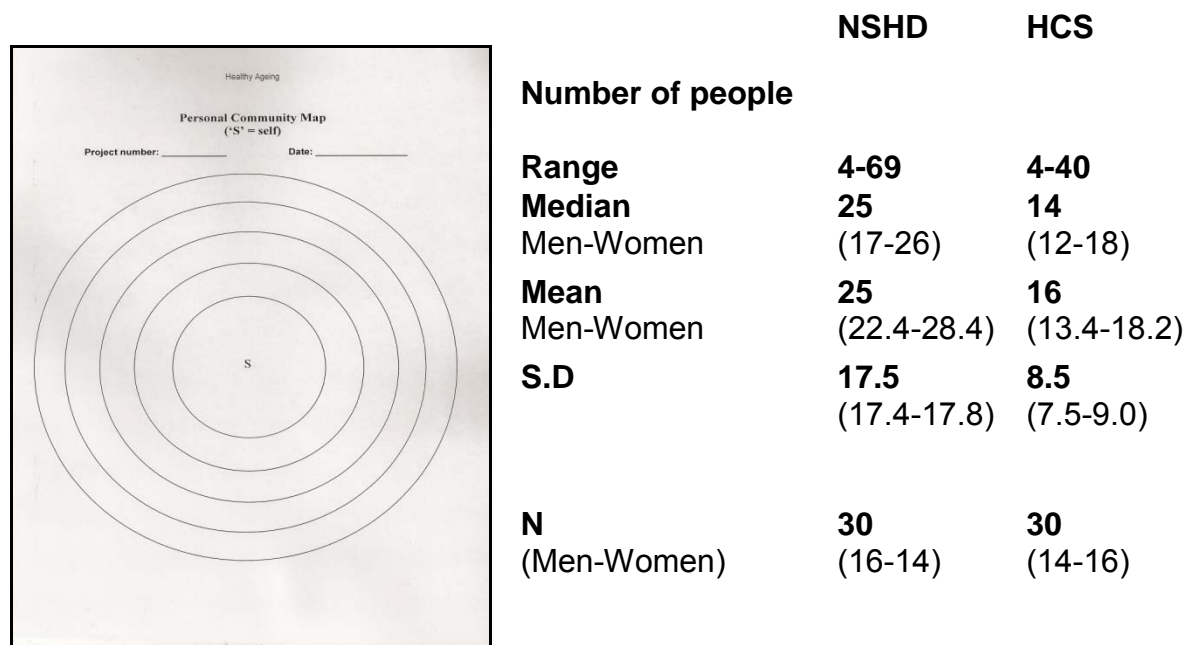
Preliminary results from the analysis of the visual exercises

As described above, during the interviews respondents were asked to complete two visual exercises. The first, Figure 2, was adapted from Spencer and Pahl (2006), who were interested in developing understanding of personal communities as sites for the production and articulation of social capital. Respondents were asked to map people who are important to them on a ring diagram, placing the most important nearest to the centre, less important further out. Cohort members were encouraged to discuss the process as they went about filling in the diagram and were then asked a series of questions about their relationship to

the people they had included and its significance. Some filled this in with great ease, others agonised over placement of their friends and family having never thought about ‘placement’ before. No one refused to complete the exercise and generally respondents found it thought provoking. ‘Difficulty’ in completing the diagram was expressed in terms of not having many people to include: *‘[Sighs] This is a hard bit....Cause I haven’t got many people that mean that much to me’* (D006), to thinking everyone was equally important or to feelings of guilt if someone was missed off or who should be included, *‘I don’t know where to start really it’s so difficult, there’s so many people, nobody’s going to see this anyway are they, but...’* (H013), to grasping what the exercise was for. *‘I don’t know what it’s supposed to mean, so it’s a little bit difficult’* (H019). On average, the number of people included on a diagram was higher in NSHD than HCS (25 to 16), and among women in both cohorts. The higher number included by NSHD cohort members most likely reflects that they have not yet reached the life stage of HCS members when it becomes common place to ‘lose’ family and friends. The higher number, on average, included by women could similarly reflect the broader range of contacts that women maintain throughout their life in comparison to men, who tend to socialise more within work and family spheres only.

The majority of the family members and friends included were placed relatively close to the respondent in the centre ring, or next ring out. Respondents in HCS included (on average) six individuals in the centre ring and five in the second ring. Respondents in NSHD included an average of eight individuals in both the centre and the second ring. Less than one person was included, on average, in the outer fifth ring.

Figure 2: Personal Community Map diagram



The second diagram respondents were asked to complete was the ‘Life Trajectory’, which followed their account of their life story. The task was to select one of eight ‘life diagrams’ (taken from Ville and Guérin-Pace 2005) that best represented their own life to date, or if none were applicable, to draw one of their own (see Figure 3). Respondents generally found this task much easier to complete than the Personal Community Map, but whereas some

just went straight in and selected a diagram: *'Oh, it's going to be number one. It's had steady rise, contentment--, come through old age. I'll just tick number one?'* (D007), for others it was more of a process of elimination and a lot of deliberation:

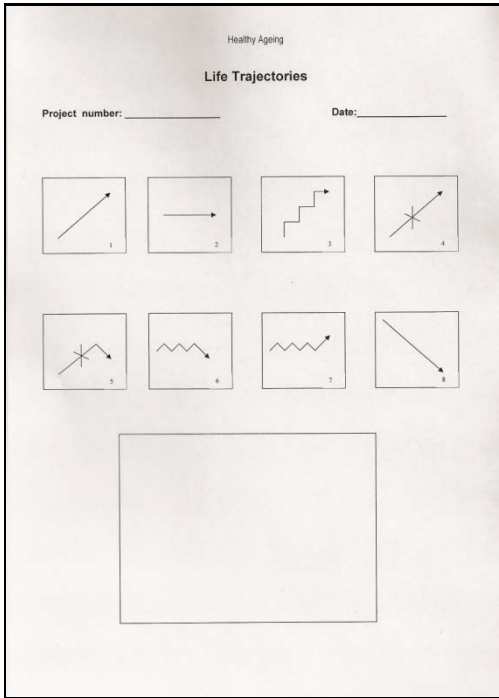
'...and this is up and down and up and down. And this is just one long--, oh, my goodness, that is a bit depressing, that one, isn't it. Number eight [both laugh]. Is this going happier or.....My life is getting--, in what--, more worthwhile, or? Is that how I feel?See, if I pick that, that looks really boring, doesn't it?That says to me, you're just jogging along. I suppose I am jogging along and I'm quite happy, jogging along. This one says to me... I don't know, you've got good bits, then a normal bit, then another good bit, and then a normal bit, and then another good bit, and then another normal bit. Hmmm, I definitely don't want that.....It's certainly not that one.....' (D023)

Two 'positive' trajectories, diagram three and diagram seven (see Figure 3), were the most popular in each cohort, and drawing an alternative trajectory was a popular choice among NSHD members and those with better capability. Own drawings were, however, usually a variation of trajectory three or seven, with different spacing between the 'ups and downs' that have been experienced.

When choosing trajectory three or seven, respondents were often torn between the two, recognising the 'steps' taken over a life: *'I think either three or seven sounds good. We all have ups and downs, don't we?'* (D018), with the final choice often coming down to how respondents felt about the 'ups' and 'downs'. Number three was associated with a sense of overall progression and current stability: *'I think three would be good... you know, have some good times then it levels off. Yeah, good times then it levels off, good times, levels off'* (D018), or *'that you will try to go up to improve things and things stay stable and then you try and improve and go stable again and do it. Instead of trying to keep going up and down...'* (H024). Respondents selecting number seven often spoke of experiencing more 'ups and downs', but felt life was currently good. They seemed to take note of the final upward 'step' on the trajectory: *'I suppose that one, a little bit up and down but I'm heading upwards, always heading upwards'* (D029) or *'Up and down, and now it's going up [laughs]'* (H007).

Figure 3: Number of people selecting each Life Trajectory diagram by cohort and capability

Trajectory	HCS	NSHD	Poor	Average	Good
1 (upward)	2	3	2	3	0
2 (flat)	3	1	1	0	3
3 (up in steps)	9	6	5	4	6
4 (up / event)	1	1	0	2	0
5 (up / event, down)	3	0	1	0	2
6 (up-down, ends down)	2	0	1	0	1
7 (up-down, ends up)	7	7	3	8	3
8 (downwards)	0	0	0	0	0
Drew own	3	12	3	5	7
<i>n</i>	30	30	16	22	22



Case Studies: Benefits of analysis at the level of the individual

There are two main benefits of integrating qualitative case study material with longitudinal quantitative data. In the first instance the qualitative biographical material can be used in tandem with the main quantitative cohort study to locate each individual in the context of the wider cohort. Secondly, the information provided in the qualitative biographical interview can be used to generate hypotheses, which can then be tested using the structured quantitative data provided from the whole cohort.

This case study is constructed for a Hertfordshire cohort member identified with poor capability from quantitative information provided in the postal questionnaire completed in 2008-09. The aim is to understand more about:

- a) an individual's perception of their own health and capability
- b) the impact of poor capability on an individual's daily life
- c) the factors that the individual cohort member believes have led to their poor capability

- d) the broader biographical context and structural factors that may have contributed to the individual's current levels of capability.

In light of the vast body of quantitative evidence showing those from poorer socio-economic backgrounds have poorer health and higher mortality (e.g. The Black Report, 1980; Marmot Review, 2010), a key component of the case study was to also try and identify some of the mechanisms that may lead to the link between low social class and poor health. Clearly the focus here was on the individual's own biographical account and it is important not to assume her interpretations provide the correct causal model, but rather to understand an individual's perspectives on the causes and correlates of poor health. The respondent's name has been changed.

General health profile

Margaret Gray (H029) was born in 1937 and was 73 years old when she was interviewed in 2010. In the 2008-09 postal questionnaire, she reported her health was very good and was about the same as a year before. Margaret is an ex-smoker and reported drinking about 3.5 units of alcohol a week. With a BMI of 32.8 Margaret is classified as obese. Capability scores for the cohort ranged between six and 18, with 18 indicating very poor capability. Margaret's total capability score was 13, which placed her in the lowest 10 per cent of the cohort in terms of self-reported capability. She reported that she was unable to cut her toenails or run for a bus and had difficulty going up and down stairs, carrying heavy shopping and doing heavy housework. However, despite this indication of poor capability, Margaret stated that she did not have a long-term limiting illness or disability.

On the Warwick-Edinburgh wellbeing scale, a 14 positively worded item scale with five response categories covering most aspects of positive mental health (positive thoughts and feelings), Margaret scored 42, which was well below the average score of 52 for her cohort. She did however, match the cohort average of 32 on the neighbourhood belonging scale, a measure of neighbourhood cohesion. For example, she agreed that she felt she belonged in the neighbourhood and had friends who meant a lot to her in the neighbourhood. Margaret lives in a well-maintained and extended ex-council house, which she first moved into 45 years ago when it was newly built.

Social class background, work and family life

Margaret's father was a skilled manual worker when she was born. She finished her full time education when she was fifteen years old. Straight after leaving school, Margaret went to work in a shop and then changed to working in a factory. In her early twenties she got a job as a bus conductress and lived in a one-bedroom flat near the bus depot. She cohabited for a few years with a man who was separated from his first wife and already had several children. When Margaret became pregnant they were married soon after and went on to have three children together. She worked for much of her married life, taking early retirement/redundancy when she was in her late 50s. When asked 'Do you think of yourself as belonging to a social class?' she replied:

'No, just working class aren't we?... cause we've never had anything...my mum never worked from the day she had me, never went out to work again. But then that was how it was in those days... So basically my dad's money had to do everything. And then when I went to work, the same thing, never had--, I mean the only time I've had money is when I had that 16,000 pound cash from (redundancy) ... and I mean I've worked all my--, all my married life. ... And I used to do a bit of cleaning but I mean we've never had--, I wouldn't say you could class yourself as anything but working class 'cause that's all we've ever done.'

Margaret's interview and life story is dominated by descriptions of family life and family relationships. Her husband died eight years ago and she is now a widow. She has one of her daughters and a grandchild living with her. Margaret placed twelve individuals on her community map, which is fewer than the average of 16. However it is clear from her interview that she has chosen only to include the most significant individuals. When asked about emotional support, Margaret explains:

'{Friend} and I tell every--, one another everything and so do me and my sister. I can tell {Sister1} everything, I can confide in her, I can weep on her shoulder, she's fine, {Sister2's} the same. The girls I don't because I don't think they want to know all my problems but {Friend} and I--, I know all about her.'

A second core theme of her life story is her enjoyment of the different jobs she has done, particularly her work as a bus conductor and later as a housekeeper for a large local firm. She gave up smoking while working at the local firm in her 50s, but makes a strong link between her smoking habit and being a bus conductor in the late 1950s: *'I mean I smoked, don't get me wrong I smoked, the worst thing I ever did but when you were on the buses it was a thing you did.'*

The impact of poor capability on daily life

During her interview Margaret provided further insights into the physical limitations she experienced, which were captured in her capability score. The main issues that she talked about were the problems she has with gardening, with walking for any length of time and her need for help in cutting her toenails. Margaret explained that 'I do quite a lot of gardening but I have to pace myself with that- An hour, and then I'll come in and then I'll have a rest and then I'll go back out there.' This idea that she now needs to 'pace herself' is repeated when she talks about going shopping:

'I'm not very good on my legs these days-... An hour walking, like when we go shopping, shopping, after an hour (daughter) says do you want to go home, yeah, I've got backache and my knees ache and--...Or we stop and have a coffee and then have another little wander.'

The use of the words 'these days' implicitly links her difficulties walking to her age. It is also clear that she is not completely immobile, but rather that she is limited in how long she is able to walk without getting over tired. When talking about the area around where she lives, Margaret makes a clear comparison with what is possible now and what she has been capable of in the past:

'...And then walks, lovely, you can go through the flats here and up through to the black bridge and we can come right the way round and down by the garden centre, beautiful. Used to do it when we had the dog but of course I can't do it now, it's too far....Can't walk, can't walk that much now.'

Margaret explained that it was really when the dog died that she no longer went for walks, which raises the practical issue about how older people can be encouraged to maintain their mobility. Had the dog not died when it did, would Margaret have maintained her ability to walk further, for longer? This is a possible example of how if we don't 'use it' we 'lose it.'

In another part of her interview, Margaret talks about how she regularly goes to a beauty salon and enjoys having a facial massage, which helps maintain her relatively youthful appearance. She also details the help she gets with cutting her toe nails, *'Have my feet done because I can't do my feet, I've got awful feet, I've got hammer toes and I can't get underneath, so I do go and have my feet done.'* This elaborates the response that she gave in the postal questionnaire about needing help with cutting toenails, that it is not just about mobility and being flexible enough to cut nails but also about having a specific foot problem.

However, despite the descriptions of the problems she faces, it is noteworthy that towards the end of her interview Margaret is clear that her health does not stop her from doing any of the things that she would like to do. This is suggestive of the fact that Margaret has relatively low expectations of what she should be capable of at her age, and that she understands health and capability as rather different. This is discussed further in the next section.

Understanding Margaret's self-assessment of her health and wellbeing

Interrogation of the quantitative data suggests Margaret has relatively low levels of capability and wellbeing and but that she still assesses her health as relatively good. Three main factors that could serve as explanations for these seeming inconsistencies at the individual level are i) the comparisons Margaret makes between her own health and others in her reference group, ii) her trust in the health professionals who are caring for her, and iii) the distinction she makes between lack of capability or her aging body and acute episodes of ill health. Each of these is discussed in more detail below.

i) Comparisons with other individuals who are less healthy

When asked how her health compared with others the same age, Margaret responded by stating that her health was very good, *'I wouldn't say excellent but I'd say very, very good.'* This then led on to Margaret talking more about her health in relation to other people she knows, firstly her neighbour and then people that she used to work with in her last job before she retired. Finally Margaret mentioned much younger people that she knew who had cancer and either had surgery or died:

'When I look at some people--, I mean my next door neighbour is 65 and when my friend saw her the other day..., "Oh, my God" she said, "don't [neighbour] look terrible?" And I said, "Well, I suppose so, I don't really look at her," "God" she said, "she looks ten years older than you."...[neighbour] looks quite old but then she suffers quite a lot with lots of

things, I mean she had a heart attack, she's got bad knees and anything but she does like a lot of sympathy.' Margaret then went on to say: 'I do class myself as lucky to be this age and be able to do what I do, I do honestly,... Well, I am thankful. Yeah, because I mean I've been to lots of funerals where people a lot younger than me, you know, I mean just recently the--, all those people that [friend1] and I used to go on those holidays with at [company], I've been to three funerals from that little gang of people ... one was 69, one was 71--, oh, I think [friend2] was the same age as me, I went to a fortnight ago, yeah, he was 74.'

Here Margaret is comparing herself with individuals from her immediate social circle whom she perceives as being much less healthy. They are therefore likely to occupy a very similar socio-economic position to her and it is arguably these comparisons that allow Margaret to construct an identity in which she is relatively very healthy.

ii) Trust in health professionals and drug regime

In the structured quantitative data, Margaret is recorded as not having a limiting long-term illness. However, during the qualitative interview she describes how she has had two 'mini-strokes', the first more serious than the second, and that she is on medication as a result of this. One interpretation of why Margaret does not treat this as a major health problem is that she trusts the health care she is getting – the people, the treatment and the medication. All three are discussed in positive terms during the interview. For example:

'...and my doctor is like, 'I'd lay down and die for her', he's amazing, he has been so good to me. I've had MRI scans, I've had two of them, I've had brain scans, neck scans, shoulder scans, back--, back--, I mean he's done everything, he has been so good to me. And I have to go and see him every three months for a little check up and he checks the tablets and checks the blood pressure and gives you a hug and a kiss and says, "See you in three months"...So basically now I've got statins I take twice a day, cholesterol tablet I take, a blood pressure thing and for my arthritis. And, yeah, I did have another funny turn but it--, it wasn't as bad as the first one, we went back down there and he said we did expect that, you usually do get two. But he said now we've got all this under control, done all these tests, they're thrilled to bits with the tests, nothing's that serious.'

In this extract Margaret uses a number of strategies to minimise her health problems, from euphemistically referring to her second stroke as a 'funny turn' that was expected and therefore normal, to everything being 'under control' and the health professionals being 'thrilled to bits with the tests'. The confidence that Margaret has in her care allows her to establish a positive and healthy identity, which contrasts sharply to the way she views her younger neighbour, someone she describes as 'suffer[ing] quite a lot with lots of things'.

iii) A distinction between acute episodes of illness and chronic capability problems

A third factor that may contribute to Margaret's assessment of her health as good, despite a relatively poor capability score, is the distinction she makes between acute periods of ill health and longer-term problems she believes are part of the normal ageing process. During her interview, Margaret recounts a recent episode of ill health. When asked about her activities over the last week, she explains that she had a 'S-H-I-T' week with sickness and

diarrhoea perhaps due to catching a stomach 'bug'. Having given a detailed account of this recent episode near the beginning of the interview, she then returns to it again at the end of the interview and says:

'you can't imagine it can you, to be ill or to feel ill. I mean last week I just felt like absolute awful, I thought, my God, I thought I was going to die on that Sunday morning. The pains in my stomach were awful, I haven't had pains like that for ages.'

Implicit in her vivid account of this recent acute episode of ill health is that this is exceptional and out of the ordinary. It is the rare occurrence of a debilitating illness and the contrast between how ill she felt and how much better she feels now that arguably contributes to Margaret's assessment of her health as normally 'very, very good'.

Hypothesis generation

This detailed analysis of an individual case suggests hypotheses that could be tested using structured quantitative data, some using existing data and others requiring additional data to be collected in future sweeps. Qualitative, case-based analysis can therefore potentially contribute to decisions about the future content of longitudinal quantitative studies. Three main hypotheses arise from the analysis provided above.

- 1) Self-reported levels of capability may only be weakly correlated with self-reported health status. This is because individuals may well conceptualise health and capability as two relatively separate dimensions.
- 2) The relationship between self-assessed capability and self-assessed health may be modified by an individual's socio-economic status. In particular those of higher socio-economic status may have relatively higher expectations about their levels of capability as they get older, and may therefore have lower self-rated health for any given level of capability.
- 3) Those who express satisfaction and confidence in the health service and the health professionals who are treating them may have higher levels of self-reported health than those with less confidence in the health care they are receiving. In the past, longitudinal cohort studies have not collected very much information, if any, about individuals' experiences of health care (although there are other quantitative studies that specifically focus on this). However, as individuals in cohorts reach the later stages of the life course, this aspect of their experience and daily life may become much more salient.

Discussion and concluding remarks

This paper has provided a descriptive overview of the design of a qualitative sub-study of the 1946 National Study of Health and Development (NSHD) and the Hertfordshire Cohort Study (HCS), which involved 60 in-depth biographical interviews. The overall response rate of 62 per cent was lower than the 71 per cent achieved with the NCDS cohort (Elliott et al. 2010), but still suggests that using a longitudinal quantitative study as the basis for a qualitative study is practical and effective⁶. An important consideration in recommending this approach is whether participation in this sub-study might have an impact on cohort members' preparedness to participate in further sweeps of the main study. The interviews gave no indication that this might be the case. In fact, among those that participated, support for the study and continued future participation was very much in evidence from the conversations. However, this can only truly be tested once the next sweep of data collection has been carried out in the two studies. This is planned for 2011 in HCS, though no date has yet been set in NSHD.

One further methodological advantage of conducting a qualitative sub-study as part of a major quantitative longitudinal study is that information is available on the individuals who *declined* to participate. This can potentially provide information on what characteristics may make individuals more or less likely to agree to take part in a qualitative study. It is also worth noting here that the letter sent to cohort members when they were invited to take part explicitly stated that the interview would 'be more of a conversation rather than a list of questions on a computer', making it clear that the style of interview would be very different from the structured interviews cohort members are used to. Neither gender nor capability score had a significant impact on respondents' willingness to be interviewed, but the sample sizes were small.

The analysis presented in this paper suggests that the achieved qualitative samples are broadly representative of each cohort as a whole, with all major groups represented. The representativeness of a qualitative study is not usually seen as a key dimension on which it should be evaluated, as qualitative researchers are typically more interested in the perceptions of respondents and the meanings they attach to events and experiences than in generalising findings to a wider population. However, as described above, one aim of this project has been to provide a resource for mixed methods research, that is for the qualitative interviews to be used in tandem with the longitudinal quantitative data from the cohort study. In this context it is arguably more important that the interviews collected were broadly representative of the cohort as a whole, and also important to understand which specific groups were under or over-represented. In comparison to the overall cohort, those interviewed were slightly better educated, and in the case of NSHD more likely to have a non-manual social class. Among those contacted who either did not reply or refused to be interviewed, there was a tendency for them to be from a lower social class, and to be single (NSHD), or separated or divorced (HCS). However, small sample sizes meant that these

⁶ The recruitment process for the qualitative study differed between the NCDS, and the NSHD and the HCS. Once the sample was selected, NCDS cohort members were sent a letter of invitation and then the interviewer contacted them directly to see if they wanted to be part of the study. In NSHD and HCS, cohort members were sent a letter of invitation and a reply slip. Only if they returned the reply slip and indicated they wished to be part of the study did an interviewer contact them to arrange an interview.

differences did not reach statistical significance in bi-variate analyses. Collaboration with HALCyon colleagues working quantitatively within the HALCyon programme has already started, with papers integrating evidence from qualitative interviews and survey questions soon to be made available.

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Appendix 1: Topic guide

HALCyon – Life course and Wellbeing

TOPIC GUIDE

Notes to Interviewers concerning the use of this guide:

- All questions must be asked.
- In the interests of building rapport and encouraging conversation, it is not necessary to read out each question *verbatim*. While it should be, or should become, possible to memorise shorter questions, longer questions can be re-phrased or adapted slightly as long as the substantive content is covered. However, if a word or phrase within a question or statement has been emboldened it *must* be used exactly as it appears.
- Probes under questions largely represent *possible* lines of development/areas to request expansion on depending on the respondent's response to the preceding question. However, if a probe has been placed in italics, the supplementary question or subject area it refers to *must* be covered.
- Further guidance and conventions relating to specific questions and subject areas are provided in separate notes under the various section headings.

SECTION 1: NEIGHBOURHOOD AND BELONGING (10-15 minutes)

Q1. We know a bit about your housing history from your survey responses but we would like to know a little bit more about your **involvement in your current neighbourhood**. Can I begin by asking you **how long you have lived here and about how you came to live here?**

Probe for:

Whether choice of residential location contingent on particular life events (job/career, marriage, kids etc)

Where they lived before.

How often they've moved.

Q2. Do you feel you belong here?

Probe for:

What are the neighbours like?

Do you feel part of a community?

Do you feel this is the right place for you?

Q3. Do you think you will continue living here in the future? Under what circumstances might you move and where to?

Probe for:

Possible reasons for staying or going - job movements, children/family reasons, local amenities, downsizing to release money, worsening capabilities/health, accommodation that is easier to manage e.g. bungalow etc.

We are interested in the quality of the local facilities that are near to where you live.

Q4: Could you say what shops and other services you have near to you.

Probe for: Do you use them? How do get to them?

Are they a walkable distance?

Places to buy healthy food?

A park or other open green space?

SECTION 2: PARTICIPATION, leisure and physical activity (15-20 minutes)

The survey included questions about your spare time interests and activities but we are not sure that these questions gave you enough scope to describe and explain what you do. We therefore want to ask some additional questions.

Q5. First, could you talk me through your last week and then last weekend in terms of how you **spent your spare time**?

Probe for:

Outside the home -

How often do went out, *what they did*, where they went, how long they spent, who they did it with/met

Motivation – *why/how did they become interested*, what do they get out of it, how long have they been doing it, *how involved are they*

Inside the home -

What they did when they stayed in, how long do they spent doing it, did they do with anybody

Why/how did they become interested, how long have they been doing it

Q6. Is this a **typical pattern**?

Probe for:

How, when, and *why it might vary*

Has there been a change when the activities/social occasions you do take place?

Are more occurring in the daytime rather than the evening?

When did it change?

Q7. Do you belong to any **organised clubs** or have any **formal associations** - for example do you attend a **church** or **evening classes**, or are you a member of a **political party**, **sports club** or **musical group**?

Q8. (*If not raised above*) Do you do any **voluntary or charitable work**?

Q9 Do you do any regular physical activities or exercise?

Probe for:

Walking

Why you do/do not participate in physical exercise

Is physical exercise done alone e.g. running/swimming or does it have a social aspect – e.g. attending a pilates class with a friend

Q10 How do the physical activities you do now compare to when you were younger?

Ok, you have told me about your life and leisure time *now and as a younger adult*, but I'd like you to think back to when you were a *child*

Q11. When you were a child, about age 11, do you remember having **somewhere to play outside the house**?

Probe for:

Did you have somewhere to play outside the house?
Was this a garden, nearby park, outside on the street
Local amenities e.g. swimming pool, safe roads to cycle on, freedom of the countryside?

Q12. Do you remember having a **ration book**?

Q13. Do you remember **sweets being rationed**?

Probe for: *How did you feel about that?*
 Do you eat a lot of sweets now?
 Would you say you have a 'sweet tooth' now?

Q14. Do you remember eating **bread when it was rationed**?

Probe for: *Do you remember when white bread became available again?*
 And now? Do you (prefer to) eat white or brown bread?

SECTION 3: FRIENDSHIPS (15-20 minutes)

(Give separate sheet with ring diagram entitled 'Personal Community Map' to respondent)

Q15. Looking at this page with the five concentric rings marked on, can you please think of **those people who are important to you**, and write their names in, with those who are **most important closest to the centre** (*allow five minutes for respondent to complete this*)

Note: where the respondent offers comments about how difficult or easy this is, encourage comments and reflections (in order to encourage discussion about the criteria being evoked).

Q16. Thank you. For each person you've listed could you say:

- Why has that person been placed there (in a specific location within the 5 circles)?
In what way are they important to you?
- How would you describe your relationship to that person (e.g. mainly 'fun/sociable' or confiding?)

Probe for:
How often do you keep in touch?
What do you talk about?
How has your relationship with this person changed in importance or intensity?

Note: Do not probe specifically for the terms used to describe the relationship (best friend, colleague, family, etc) since we want to know the lay terms used by respondents.

Ensure that when the respondent points to an individual the name of that person and their position within the ring structure is also clearly mentioned for the tape transcription.

When this exercise has been completed, please indicate the relationship of each person to the cohort member by annotating the diagram (e.g. Mum; Bro; Aunt; Cous; Fr=friend; Wk for work colleague, etc) in a different colour ink to one used by the respondent.

Q17. Thinking about the people you have included here as being most important to you, who would you say you rely on for most of your emotional support?

Q18. Is there anyone who relies a great deal on you for emotional or practical support?

Probe for what type of support is given, how much time is spent on this, how the cohort member feels about this?

SECTION 4: LIFE STORIES & TRAJECTORIES (up to 30 minutes)

The **NSHD study** has collected information about your life over the years. But we'd now like to give you more of a chance to say what has been important in your life from your own perspective.

The **Hertfordshire study** has collected a lot of detailed information about you in recent years. But we'd now like to give you a chance to say what has been important in your life from your own perspective.

Q19. So could you talk me through your **life story** as you see it?

Note: Reassure the respondent that they can take as much time as they wish or need.

It is particularly important not to prompt or to offer any structure at this point but to let people construct their own response and to give them some time to work out how they want to do it. If they ask for clarification, indicate that there is no 'right' way to do this and encourage them to start where or with what they want to.

Only if, after 10 minutes or so, people are really struggling to give a response, or if their response is very short and they have actually finished their account after a few minutes, should they be given some assistance/asked to expand using the following prompt structure:

- **Starting with your childhood could you say a bit about**
 - **what kind of child you were**
 - **how you got on at school**
 - **who had the most influence on your life**

- **Thinking about when you left school and decided what to do next ...**

- **Going back to your early years of work and your twenties...**

- **Focusing on your thirties and forties...**

- **Focusing on your fifties (and sixties)...**
Note: include brackets for Hertfordshire cohort)

- **Finally thinking back over the past few years - ...**

Q20. Have you covered all of the major points you want to cover? What would you say have been the **key influences and turning points**?

Probe for:

Why were they important - *how and why they changed the course of a life or lives?*
Influential people as well as events/situations

Q21. If you had to depict your life up to now by means of a diagram, which of these diagrams would you choose (*show separate 'Life Trajectories' sheet to respondent and ask them to mark which one with a tick*), or if none of these apply, can you draw a more representative pattern in the blank box?

Note: where the respondent offers comments about how difficult or easy this is, encourage comments and reflections (in order to encourage discussion about the criteria being evoked).

SECTION 5: IDENTITY AND PERSPECTIVES ON AGEING (15-20 minutes)

We are interested in **how you see yourself as a person**, and whether and in what ways this might have shifted or changed over the course of your life.

Q22. Do you think of yourself as **belonging to a social class**?

Probe for:

If so, which one, and why? If not, why not?

Have you always felt this way? *Did you feel you belonged to a particular social class when you were growing up?*

Have particular experiences ever made you more or less aware of yourself as belonging to a class?

Note: if respondents refer to themselves as 'ordinary', they should be asked to expand on what they mean by this.

Q23. Do you think of yourself as **belonging to a particular generation**?

Q24. What are the main advantages and disadvantages of being the age you are?

Probe for:

Health and physical factors

Q25. Compared with someone the same age as you would you say that your health is (Excellent, very good, fair, poor, very poor)? What goes through your mind when you say that?

Has your health stopped you doing anything that you would still like to do?

Has it has any other impact?

Q26. What about your husband/wife/partner's health? How would you say that their health is? (Excellent, very good, fair, poor, very poor).

Has their health stopped you doing anything that you would still like to do?

Has it had any other impact?

Q27. What would you say it means for someone your age to have **very good or excellent** health?

What would you say it means for someone your age to have **poor or very poor** health?

Q28. Why do you think some people are healthier than others?

Q29. Can you tell me the things you do to help keep yourself healthy/well?

Note: Probe 'why' they are done – what specific reasons for an 'activity' or 'diet', etc.

Q30. Are there things you do that you think are bad for your health?

Note: Probe 'why' they are they bad – why continue to do them –

Q31. Still thinking about your health, if you could go back in time and change some of the behaviours/things about your life (e.g. what you ate, how much physical activity you did, the work you did), do you think that would affect the health you're in now? Would it have been worth changing those things?

SECTION 6a: MEMBERSHIP OF THE Hertfordshire Cohort

Q32. Finally, we are interested in how you feel about being part of the Hertfordshire cohort. So, could you say how you have found it?

*Further probes: Has you found it informative?
 Do you feel informed enough?
 Is there anything that could improve your experience?*

SECTION 6b: MEMBERSHIP OF THE NSHD (10 minutes)

Finally, we'd like to find out more about what it has been like for you to be a member of the NSHD - whether it's been a good and interesting experience, how it might have been improved, whether we've been asking the right types of questions, and so on.

Q32. Do you have any memories of being in the study as a child?

Probe for:
What? Whether unsettling or enjoyable, etc

Q33. As an adult there has been the opportunity to be interviewed many times. Can you recall any occasions on which you were invited to but you didn't take part? What were the reasons for this?

Note: if the response to this question doesn't match the respondent's actual participation record or if they have missed an interview but can't recall, remind them and prompt again for reasons for not taking part.

Q34. Has being part of the NSHD had any impact on your life?

Probe for:

Whether it makes them feel somehow different from other people

Do you ever talk about being a panel member with anyone? Who? In what context?
Does the experience of being a panel member ever encourage you to reflect on your own life and experiences?

THANK YOU VERY MUCH! That's the last question in this interview but before we finish are you happy that we've covered everything you wanted to say? Is there anything else you would like to raise or mention?

Appendix 2

Profile (number) of respondents approached for the qualitative sub-study by interview status

	NSHD		HCS	
	Interviewed	Not Interviewed	Interviewed	Not Interviewed
per cent male	16	8	14	12
per cent I or II social class	14	5	9	6
per cent non-manual occupation	23	11	17	7
per cent own home	29	15	25	18
per cent single, never married	1	3	1	0
per cent separated / divorced	3	1	0	2
per cent post 16 education	21	11	14	6
per cent post 18 education	9	3	2	0
per cent good capability	13	4	10	10
per cent poor capability	5	6	10	7
per cent father non-man occupation	16	10	6	1
<i>n=</i>	30	16	30	21

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