Age takes hold of us by surprise: Conceptualising Vulnerabilities in Ageing as the Timing of Adverse Events

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Abstract

Objectives

Ageing in the public eye can be distilled to a limited number of adverse events, such as loss of health, partnership and wealth. While these events are a constitutive part of “normal ageing”, they do not occur uniformly at the same time point in the life course. This study investigates to what extent bereavement, functional health loss and onset of poverty are adequate markers of ageing, and illustrates inequalities in their timing according to cohort, gender, class and ethnicity.

Methods

Data of the English Longitudinal Study of Ageing (ELSA), collected over 7 waves (2002-2016) (n=7913) are examined using survival analysis.

Results

Persistent associations of manual or routine occupational class and belonging to an ethnic minorities are found with increased hazards of health loss, bereavement and wealth loss. Later born cohorts have higher health loss hazards as well as lower hazards for wealth loss, while earlier born cohorts have lower hazards for bereavement. Gender effects are pronounced in terms of bereavement, limited in terms of health loss and absent in terms of wealth loss.

Discussion

The timing of adverse events is a crucial gateway through which existing social inequalities are transferred into unequal ageing pathways.

Keywords:

Bereavement, Poverty, Health Disparities, Event history methods, Transitions

1. Introduction

In her landmark study of ageing, Simone de Beauvoir states after Goethe that “Age takes hold of us by surprise”(de Beauvoir, 1970, p283). In her interpretation, an individual’s subjective realisation of the ageing process is often brought about externally, by living through adverse events. These constitutive external shocks emphasize that ageing is a process that is closely tied in with vulnerability to risks. Interpreting ageing as defined by a limited number of transitions associated with loss in multiple domains, opens up the way to study ageing not as age, a reductive number reflecting the accumulation of years since birth, but as the experience of a series of interconnected adverse events. While these shocks, such as loss of physical health, loss of a partner and loss of financial wealth, are part of “normal ageing”, they do not happen uniformly at the same time point over the life cycle for everyone. The high degree of variability as to when exactly these events happen is a defining feature of inequalities in ageing. Experiencing adverse events, such as the onset of disability, loss of partner or becoming poor, earlier rather than later in life has a marked negative impact on wellbeing and quality of life in old age (Jivraj, Nazroo, Vanhoutte, & Chandola, 2014), not just because of the actual loss of social resources these shocks represent, but equally because of the implicit negative comparison with a similarly aged reference group. Therefore the timing of adverse events is a crucial gateway through which existing social inequalities are transformed into unequal ageing pathways. This paper focuses on investigating the timing of these transitions, and hence the differences in susceptibility to these risks.

This paper first focuses on the timing of three constitutive adverse events that commonly occur in later life. While not all three of them will occur for everyone, they loom large over the societal conceptions of ageing and its negative connotations. The state brought on by

these events can be temporary, and recovery is certainly possible, but the emphasis is on investigating their first occurrence in later life.

Second, this paper investigates to what extent social background influences the timing of these ageing transitions, as vertical hierarchies in terms of advantage and disadvantage translate themselves in more horizontal one that play out over time, as in early versus late.

While I believe interactions between different markers of advantage can occur, it is outside of the scope of this paper to investigate them. This paper makes use of the English Longitudinal Study of Ageing (ELSA) in an event history framework.

1.1 Vulnerabilities in ageing as susceptibility to risk

In disaster studies, vulnerability conceptually covers the potential for disruption or harm, which in conjunction with the occurrence of a hazardous event produces a disaster (Wisner, Blaikie, Cannon, & Davis, 2003). Vulnerability hence is associated with the demographic and social structure of the population, and its susceptibility to an imminent, potentially disruptive, event (O’Keefe, Westgate, & Wisner, 1976). In social sciences, vulnerability acquires a different meaning, comprising an external as well as an internal side: it covers exposure to challenges, risks and stressors, as well as the difficulty of coping with them (Chambers, 1989). While this dual meaning reflects the colloquial usage of the term, it conceptually confuses susceptibility to risks, or exposure to threats, with its consequences.

This paper focuses on the former meaning, additionally defining vulnerability dynamically, as an event. This entails that risks only occur to those vulnerable to loss, i.e. people who have a partner, who do not have functional health limitations, or who have some wealth. Although embracing this definition shifts attention away substantially from disadvantaged and precarious populations, who are already socially isolated, disabled or poor before they enter old age, it equally emphasises the insecurity and vulnerability to adverse events as a feature

of aging for everyone (Grenier et al., 2017). Although the events under study are considered to be imminent for most people in later life, the timing of their occurrence is not exactly predictable. This brings our approach to vulnerability in line with both Butler's (2009) concept of precariousness, reflecting a vulnerability shared by all humans, and Standing's precarity (2011), which emphasises the unequal distribution of risk exposure. It has been argued that in the current context where increasing longevity is accompanied by a political economy of austerity, the combination of unpredictability and dependence on others inherent in precarity, is becoming a feature for more and more people in late life (Grenier et al., 2017).

One crucial aspect of investigating vulnerability concerns what exactly people are vulnerable to (Schröder-Butterfill & Marianti, 2006). Although vulnerability is sometimes used as a catchall term designating various types of disadvantage, three specific adverse events are singled out: loss of functional health, loss of partner and loss of wealth. All three risks are common fears associated with growing older, and, except for loss of wealth maybe, perceived to be constitutive of normal ageing. Instead of investigating ageing as a gradual process of change, this paper explores ageing as a series of transitions. As events marking the passage from one stage to a next, transitions can be seen as 'rites of passage' when accompanied by a ceremony or ritual, but more importantly mark a clear break between two different social positions (Van Gennep, 1960). Even if these transitions seem less ritualised in contemporary societies, they capture how ageing is conceptualised: as a passage from one stage of life to the next. Loss of functional health has become a hallmark of the transition from a life stage characterised as active, the third age, to a more passive fourth age (Laslett, 1989).

Bereavement is a less marked boundary between stages, but a transition to a more withdrawn, isolated widow(er)'s life is assumed. Wealth loss is associated with the view of late life as a period of increasing dependency, especially for women (Dressel, 1988). Taking these three transitions together illustrates how contemporary societal perceptions of ageing are associated

with making the transition from an active, socially connected and independent life, to a passive, withdrawn and dependant life.

Spanning health, social and economic domains, these transitions are considered separately, although they are interlinked. Each transition in itself highlights a specific aspect of the pathway to old age. Our focus is on understanding how these risks tie in with chronological age, and how they are distributed over gender, cohort, class and ethnicity.

1.2 Functional health loss

Loss of functional health is a part and parcel of the ageing process, and for many people one of its most worrisome aspects. As a key phase in the disablement process, it is a translation of the influence chronic impairments have on everyday living (Verbrugge & Jette, 1994). While loss of functional health does not need to be permanent and recovery is possible (Rowe & Kahn, 1987), this study considers the first occurrence of functional limitations as an important transition in process of ageing.

While some investigations of gender differences in functional limitations find women reporting more limitations than men (Murtagh & Hubert, 2004), others find none (Schön, Parker, Kaʀeholt, & Thorslund, 2011). One explanation for these diverging findings is the interaction of age with gender differences: while the gender disparity in functional health is small in early old age, it becomes more substantial in the oldest old (Liang et al., 2008).

Taking cohorts into account allows an indirect test of the compression of comorbidity thesis (Fries, 1980). This hypothesis states that the age of onset of disability increases when longevity increases, so that there is an increase in healthy life expectancy. A more pessimistic view is that the additional years of life are often spent in worse health (Verbrugge, 1989). In practice, both increasing (Jagger et al., 2007) and decreasing (Spiers, Carol, & Clarke, 1996) levels of dependence for daily activities have been reported, illustrating that evolution over

successive cohorts is not necessarily linear. Inequalities in health by social position are large, consistent and present in all societies (House, 2002). Ethnic minority background is associated with increasing health risks in later life, illustrating how the cross-cutting of multiple statuses of disadvantage can have compounded effects (Nazroo, 2006).

1.3 Bereavement

Losing your partner in later life is a common, and potentially very damaging, event.

Bereavement, or the experience of having experienced the death of one's spouse, is explicitly framed as an event, and differs from widowhood, the ongoing state of not having a spouse anymore (Bennett & Soulsby, 2012).

Our study examines when and to whom bereavement occurs? Combining two essential demographic facts, namely the gender longevity gap, with men generally having a shorter lifespan (Felder, 2006) and age hypergamy, with men tending to be older than their partner (Presser, 1975), results in a strong gender imbalance in experiencing bereavement. As the age difference between partners has changed little in the cohorts we are studying (Wilson & Smallwood, 2008), we do not expect strong cohort effects in bereavement. Differences in social background in susceptibility to bereavement to a large extent is a function of homogamy, or the tendency of socially similar people to couple up. As in other societies, social homogamy in the UK has been strong and has no sign of weakening (Halpin & Chan, 2003). In combination with the strong social gradient in mortality (Chandola, 2000), we could expect bereavement to equally occur along a social gradient, with higher risks for bereavement at younger ages for manual and intermediate classes compared to professional classes. Following a similar logic, we expect ethnic minorities to have higher odds of bereavement.

1.4 Wealth loss

While poverty in later life to a large extent is the continuation of poverty earlier in life, the focus here is exclusively on poverty emerging in later life. The emphasis on paid employment in our society creates economic dependency in old age, through the social policies related to the retirement transition (Walker, 1980). Commonly poverty is defined in relation to income, but because of the large income changes that accompany retirement, a more stable indicator of poverty in late life, low financial wealth, is investigated.

Wealth accumulation is a lifelong process, and as each generation faces different opportunities and risks, it is possible that cohort effects in the onset of later life poverty exist. Baby boomers have often been called the lucky generation, as they lived through an extraordinary combination of historical circumstances: a strong welfare state, educational expansion and improvements in living standards throughout their lives (Higgs & Gilleard, 2010). As such it we would expect them to have lower chances to entry poverty in later life than previous cohorts, as their higher wealth levels should act as a buffer to poverty risk.

Even if poverty occurs for the first time later in life, it is strongly linked to earlier employment and marital histories (Glaser, Nicholls, Price, & Gjonça, 2009). Weaker employment histories, punctuated by career disjunctions accompanying parity and higher prevalence of part time work, lead to a more fragmented build-up of pension rights, put women at higher risk of poverty in old age (Hardy & Hazelrigg, 1993). As it is a longstanding fact that social class influences both onset of health problems (Gray, 1982), as well as wealth levels, we suspect a strong relation between occupational class and onset of poverty.

2. Data and methods

2.1 Data

The English Longitudinal Study of Ageing (ELSA) (Stephens, Breeze, Banks, & Nazroo, 2013) is a biannually collected representative panel study of the community residing population over 50 in England which allows to investigate susceptibility to these different risks. This study uses waves 1-7 (2002-2016) of ELSA, covering a time span of 14 years. Only one respondent per household is selected, to avoid double counting events that occur on the household level, such as loss of partner and loss of wealth. We limit our analysis to observations of respondents aged 95 or less (N=7913), to avoid inference based on few cases. All analysis are weighted using the cross-sectional wave 1 weight provided.

2.2 Methods

While ageing processes are often studied using growth models, reflecting gradual change over time, this paper emphasizes ageing consists of a number of major transitions. This study aims to examine whether and when the adverse events happen, for which event history analysis is the most fitting technique (Singer & Willet, 2003, p.306). Our metric of time is age in years. This substantial range of time points we are studying, as well as the fact that the processes of loss under study are continuous in nature rather than discrete, make continuous time event history techniques an adequate and parsimonious option. Censoring is a key feature of event history data, and occurs when a respondent's event time is unknown. Due to the structure of the panel data, cases can be either left or right-censored, or have delayed entry. Right censoring occurs when the event under study is not experienced during the observed time, while left-censoring means the event has already happened before the first observation point. As the metric of time of the observations is restructured from wave to age, and the sample spans multiple cohorts, delayed entry occurs in our dataset: while some

respondents are aged 60 at the first observation, others will be aged 70 and unobserved at age 60. Cox Proportional Hazard regression (Cox, 1972) is a robust technique to deal with these issues, as long as censoring is non-informative. This means that censoring time is unrelated to failure time (Enders, 2010). Cross-sectional weights are used to correct for sampling bias.

2.3 Events under study

Events are defined using limitations in instrumental (IADL) and non-instrumental activities of daily living (ADL), marital status and financial household wealth. Health loss is defined by making the transition from having no limitations in to at least one limitation out of these ten activities: bathing, dressing, eating, getting in/out of bed, walking across a room, using a telephone, managing money, keeping track of medications, shopping for groceries and preparing a hot meal. Of the 4916 respondents in the risk set, 1754 experienced this transition during the observation period. Investigating IADL and ADL separately did not yield substantially different results. Bereavement is defined by making the transition from being married or partnered to being widowed. Of the 4285 respondents in the risk set, 583 experienced this transition during the observation period. Wealth loss is defined by entering the lowest quartile of financial wealth (excluding housing wealth). To ensure we can compare household wealth across individuals in different types of household, we divide household financial wealth by the number of adults in a household (Crawford, 2016). The threshold of this lowest quartile of individual financial wealth is 500 pounds in wave 1 (2002), and this threshold, adapted to the consumer price index as reported by the Office for National Statistics, is used to determine entry into the lowest wealth group in later waves. In this way entry in the poorest part of the sample is stable over time. Of the 4889 respondents in the risk set, 857 experienced this transition during the observation period. Investigating entry into the lowest quintile instead did not yield substantially different results.

2.4 Explanatory Variables

To investigate how social structure influences the timing of the transitions mentioned, we investigate the influence of four indicators of socio-demographic position: birth cohort, gender, class and ethnicity (see Table 1). Birth cohorts spanning five years of birth, centered on the middle birth cohort representing early baby boomers (born 1932-1937) are used.

Occupational class is investigated making use of the three category version of the National Statistics Socioeconomic classification (NS-SEC3) distinguishing between professional, intermediate and manual occupations. Due to the late expansion of education in the UK, for these cohorts in England class is argued to be a better measure of social inequalities than education (Vanhoutte & Nazroo, 2016). Ethnicity is dichotomised into white and non white background, as there is only a limited proportion of ethnic minorities present in ELSA. While this approach conflates very different ethnic groups, it allows to identify to what extent ethnicity plays a role in ageing process over and above other social background characteristics, instead of excluding them from the study.

[Table 1]

3. Results:

A first descriptive step is exploring the baseline hazard functions of each event, which tells us how the risk to experience the adverse event evolves over age. A second step is to examine to what extent the risk of each event happening depends on gender, cohort and social position. This gives us insight into the structural inequalities associated with each adverse event.

[Figures 1a-1c]

The smoothed hazard estimates of the transitions under study (Figures 1a-1c) illustrate the hazard, or the probability of an event happening if it hasn't happened yet, over age. It shows that all three events have the highest hazards at the most advanced ages, although wealth loss stands out by having a second period of increased hazard, around the age of 60. Losing functional health (Figure 1a) is a common adverse event, increasing gradually, with a marked exponential increase around the age of 80. Bereavement (Figure 1b) is a rarer event, with the hazard increasing slightly until the age of 75, after which the hazard exponentially increases with age. Wealth loss (Figure 1c) on the other hand does not follow the pattern of a monotonic increase in hazard over age. Wealth loss occurs relatively often in the younger age ranges of our study, around the age of sixty, occurs less again between 65 and 75, but then gradually increases with age, to reach its maximum hazard around the age of 89. While loss of partner and health show a similar pattern of gradual increase over age, wealth loss shows a different profile in terms of hazard rate. All three events nevertheless show the highest hazard rates in the oldest old, aged over 80, where they level off.

[Table 2]

In a second step we investigate to what extent socio-demographic background, in the form of cohort, gender, class and race is associated with the occurrence and timing of these events by using a cox proportional hazards (CPH) model. Using graphical methods as well as statistically testing if residuals are associated with time (Schoenfeld, 1982), we found hazards were not always proportional over time, a necessary assumption to use CPH. The influence of class and gender varied over age on the hazards of bereavement. By including interactions for these social markers with age, this issue is resolved in an informative way. To assist

interpretability, age was centred at either halfway the age range of the sample (70). Results are presented in Table 2.

When looking at the onset of health issues, defined as having at least one limitation out of ten in (instrumental) activities of daily life, cohorts seem to matter little, except for the latest born cohort having a substantially lower hazard compared to early born cohorts. Controlling for other markers of social inequality, women have a slightly lower hazard for health loss than men. Social class has a marked influence with a professional class background resulting in experiencing functional health loss respectively less often, and manual class more often at each age compared to intermediate class reflecting the social gradient in health. Ethnicity does not affect the hazard of health loss in our sample.

Examining the occurrence and timing of bereavement, we can see that losing one's partner happens significantly less frequently at a given age among earlier born cohorts. This is a counterintuitive finding as our hazard estimate (Fig 1b) showed hazard for bereavement is highest in the oldest age ranges, but is not necessarily in contradiction. It means that these older cohorts have a lower hazard to experience the transition from partnered to widowed than later born cohorts are projected to have when they reach their age. Partner bereavement affects women more frequently than men, with more than double the frequency of occurrence. As the interaction with time illustrates, this higher hazard diminishes slightly with rising age. Those with professional occupational background experience bereavement less than intermediate occupations, while routine or manual occupations do more, and the latter even increases over age. The hazard for respondents with minority ethnic backgrounds is 25 percent higher than for white respondents, after taking into account cohort, gender and class.

The last column of Table 2 examines the timing of the hazard of onset of poverty in later life. Step one illustrated the different relation wealth loss has to age, compared to other transitions we investigated. As all cohorts are not observed over the whole age range, our models makes the defensible assumption that different cohorts follow a similar trajectory over age, although we only observe a part of that underlying trajectory, expressed in the baseline hazard. Under that assumption, the higher hazard at the younger age ranges from Fig 1c is part of that baseline hazard, showing a bump at the younger age ranges, and the more elevated risks for earlier born and older cohorts are seen as resulting from statistically insignificant cohort effects. Gender did not have a significantly lower hazard when taking into account the other markers of social inequality. Compared to manual and routine workers, professionals has more than two times less the hazard of falling into the lowest wealth quartile, while intermediate occupations had a lower hazard. Ethnic minority status was associated with a 30 percent higher hazard of substantial wealth loss.

4. Discussion

This study aims to promote a dynamic perspective on vulnerabilities in ageing, in the process redefining ageing as experiencing adverse events rather than accumulating years.

Vulnerability, in its meaning of susceptibility to risk, in this way is entangled with the ageing process, as the adverse events most feared in ageing, such as loss of health, loss of partner and loss of health, are risks that all humans are susceptible to, so that ageing exposes our shared precariousness. The uncertainty of when these transitions will happen, and their transformation due to increased longevity, raises the question to what extent these risks are socially structured. This study has confirmed that social inequalities, which mark vertical differences in society in terms of life chances and opportunities, influence the more horizontal and longitudinal timing of these constitutive and normative ageing transitions, in this way translating inequalities that accumulate over the life course into temporalities of early or late.

First, the analysis shows that health loss and bereavement share a similar age profile, increasing more steeply from 70 onwards for bereavement and 80 onwards for health loss. Wealth loss shows a different profile, with high hazards to fall into the lowest quartile of wealth before the age of 65, as well as after the age of 75. Nevertheless, the hazards for all three of these adverse events are highest at the highest age ranges, reflecting their status as constitutive transitions in an event based approach to ageing. The study illustrates that next to substantial individual variation, there is also substantial variation in timing between event types. While not everyone faces all risks investigated, those who do, most likely do so at different time points in their lives. Median lifetime, a descriptive statistic that summarises when half of the population at risk has experienced the event, differs substantially for each transition, with the most common adverse event, onset of health limitations, having a median lifetime of 76, while wealth loss and bereavement tend to happen later, with median lifetimes

of 81 and 86 respectively. These findings emphasize ageing is a series of interlinked transitions rather than a single transition based on health status, as implied by the third age perspective (Laslett, 1989).

Second, social inequalities in terms of the timing of ageing transitions are shown. It is clear that across the different transitions, occupational class plays a consistent lead role in conducting the rhythm of ageing transitions, with more advantaged, professional class backgrounds having lower hazards, and manual occupations having higher hazards to experience adverse transitions of ageing in comparison to the intermediate classes. This profound and unequivocal influence illustrates occupational class remains a vector of life chances in later life, and is far from obsolete as a cause of inequalities for the generations under study as some have argued, as it systematically predicts the relative timing of meaningful transitory events into later life. Other markers of inequalities play a more specific role, heavily depended on the transition under study.

As period changes combine with life course circumstances engrained in each birth cohort, ageing is different for each generation (Riley, 1987). Assuming cohorts are generations, or have an enduring influence of sharing time of birth, historical context and socio-cultural location (Mannheim, 1952), opens up a life course perspective on ageing. As we theoretically expected, the “lucky” baby boomer cohort, born after the Second World War, stands out positively in terms of health and wealth. Cohort effects on bereavement are counterintuitive, with lower hazards of losing your partner for the older cohorts. As more people divorced and separated in later born compared to earlier born cohorts, there could be an indirect selection into partnership of less healthy couples, more prone to losing their partner earlier. A more direct health selection effect, with healthier older couples remaining in the study more could also play a role. In terms of wealth loss, the two latest born cohorts stand out, with lower hazards of entering poverty, suggesting that baby boomers might be better armed than earlier

generations to avoid wealth loss in later life. An alternative interpretation is that it is a life cycle effect: Near retirement age, the anticipated economic transition of income to old age pension is often accompanied with the release of a lump sum, which our study shows for many seems to lead to a (temporary) relief from financial struggles.

On entry to later life gender differences, such as the more fragmented and diverse working histories of women, combined with a larger share of child care responsibilities (Benson et al., 2017), are compounded, and have shown to result in gender inequalities in health and wealth in later life, through processes of risk accumulation (Arber & Ginn, 1993). Gender was most strongly associated with bereavement, with women experiencing it earlier and more often at a given age than men. From a demographic perspective, this was to be expected given longevity differences and age heterogamy. More surprisingly, women in our study have a later onset of limiting health problems, and there is no significant association with wealth loss, after controlling for the other factors in the model.

Ethnicity has been flagged up earlier as an understudied aspect of inequalities in ageing (Nazroo, 2004; Phillipson, 2015). While data scarcity is a valid reason to exclude ethnic minorities from research, this paper highlights that even with a limited minority sample inequalities can be studied. Ethnic minority status brings on earlier bereavement and higher risk of poverty in late life, independent of class, cohort or gender. While other studies have shown inequalities exist in later life within the category ethnic minorities (Nazroo, 2004), it is needed to expand this level of detail to the study of life transitions to understand how exactly ethnicity as one part of an intersectional process affects transitions of ageing.

This study suffers from some limitations. First, the broad thematic scope of our study, in combination with the advanced quantitative methods, prohibit investigating intersectional effects of the markers of social disadvantage. Second, while the methods used mitigate

selection effects, they still might influence our results. Third, the ethnic diversity of the sample is limited, so that more detailed analysis on ethnic minorities are not possible. Further research could focus on the subjective experience of these transitions in an everyday context, as well as examining them in a comparative framework.

To conclude, this study highlights ageing is a multidimensional process of transition that happens according to socially structured rhythms, with more advantageous positions resulting in later transitions. In this way the timing of adverse events is a crucial gateway through which existing social inequalities are transferred into unequal ageing pathways.

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Tables

	Wave 1 (N=7530)	Wave 7 (N=3121)
Cohort		
Before 1917	5.2	/
1917-1922	8.5	2.5
1922-1927	10.0	5.9
1927-1932	13.0	10.7
1932-1937	14.3	16.9
1937-1942	13.8	17.1
1942-1947	18.4	23.4
1947-1952	16.9	23.7
Gender (ref.: Male)		
Female	55.8	58.2
Class		
Professional	29.4	36.1
Intermediate	23.7	25.1
Routine and Manual	47.0	38.8
Ethnicity (ref.: White)		
Ethnic Minority	2.8	2.4

Table 1: Descriptive statistics of exploratory variables in first and last wave of ELSA (in %)

	Health Loss (I)ADL (n=4790, n failures= 1682)		Bereavement (n=4185, n failures 557)		Wealth Loss n=4699 n failures=843	
	HR p	SE	HR p	SE	HR p	SE
Cohort (Ref. 1932-1937)						
Before 1917	0.99	0.18	0.51*	0.16	1.56	0.50
1917-1922	1.03	0.15	0.46**	0.11	1.29	0.32
1922-1927	1.13	0.13	0.69*	0.13	1.06	0.21
1927-1932	1.10	0.10	0.75	0.12	0.98	0.15
1937-1942	0.91	0.09	0.95	0.16	0.95	0.15
1942-1947	0.86	0.11	1.20	0.27	0.66*	0.13
1947-1952	0.67**	0.10	1.07	0.33	0.52**	0.11
Gender (Ref.:Male)						
Female	1.04	0.06	2.42***	0.29	0.91	0.07
Occupational Class (Ref. Intermediate)						
Professional	0.83***	0.06	0.83***	0.06	0.55***	0.07
Routine/Manual	1.35***	0.08	1.64***	0.07	1.39***	0.12
Ethnicity (Ref. White)						
Ethnic minority	1.08	0.06	1.24*	0.11	1.30***	0.08
Female X Age ^a			0.98*	0.01		
Routine/Manual class X Age ^a			1.04**	0.01		

Table 2: Cox proportional hazards regression (weighted)

* p<0.05; ** p<0.01; *** p<0.001

^a centered on 70

Figure captions

Fig 1 a-c. Smoothed hazard estimates of (a) Health Loss (N=4916, failures=1754) (b) Bereavement (N=4285, failures=583) (c) Wealth Loss (N=4889, failures= 857)