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Well-being over the work life

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Abstract

Much research has been devoted to uncovering evidence regarding the relationship between age and well-being. A substantial majority of this evidence indicates that well-being follows a U-shape pattern over working life, concomitant with a midlife low. This evidence comes from the raw data, as well as both cross-section and longitudinal investigations. This evidence is explored and discussed along with an appraisal of literature disagreeing with the dominant finding. Additionally, this chapter discusses the currently much less populous literature that attempts to find reasons for this midlife low, and puts forward suggestions for future research.

1. Introduction

It is believed that the first time that a midlife crisis was explicitly mentioned was in 1959 when Canadian psychoanalyst and social scientist Elliot Jaques gave a presentation at the British Psychological Society, several years before publishing a book about this issue and creativity (Jaques 1965). Other works by psychotherapists suggest a much longer history for a midlife 'crisis', linking it to Greek mythology (particularly Hermes and Sisyphus), literature (e.g. Homer's *Odyssey* and Dante's *Faust*), poetry and popular culture (Hollis 1993, Kast 1991, Polden 2002; Stein 2014). Astrologists have also a well-honed notion about midlife suffering that they term the Uranus Opposition, which occurs when an individual is in their early 40s (see for example Clow 2001). Numerous memoirs, too many to cite, also suggest that this period of the lifecycle can be a messy and confusing one.

Much research in social sciences has been devoted to uncovering evidence regarding the relationship between age and well-being over the life-cycle. A large majority of this work finds a midlife low, showing that well-being declines from the start of working life to this midlife low before increasing again. This decline, on average, is not trivial and has been found in unadjusted and adjusted models, and in both cross-sectional and longitudinal analyses. The findings of these studies, which often use nationally representative survey data, have also been supported by more objective measures of well-being like anti-depressant usage, lack of sleep, and what has been termed 'deaths of despair' including suicide.

At the outset, let us add a note about semantics. The debate regarding the relationship between age and life satisfaction has often been characterised by whether it follows an approximate U-shape or not (indicating higher well-being in the earlier and later years of working life, with a midlife low). Among the articles showing a significant

relationship between age and life satisfaction, there is also a discussion about the precise shape of this effect. Does it really take the shape of a U? Would the shape of a ski slope be more appropriate as suggested in Kratz and Brüderl (2021)? In general, the precise shape can depend upon a particular dataset, estimation sample and/or identification strategy. Since it does not question the existence of a midlife low and is mainly based on econometric technicalities, this chapter will not explore further the debate concerning the characterisation of the precise form of the relationship between age and well-being. This chapter rather discusses the evidence in regard to whether a midlife low is a defining feature of well-being over the work life. Studies that look at the whole of life rather than working life sometimes find that happiness declines at the end of life (e.g. Wunder et al. 2013). However, these studies generally demonstrate the typical midlife low pattern over working life.

This chapter discusses this work, addresses some misperceptions, and challenges to this majority finding. Following this, the chapter moves on to discuss the more nascent research attempting to find evidence for reasons for this midlife low. This discussion goes beyond the econometric work, and additionally discusses evidence from pyschology, sociology, biology, and medical science. All inform, in their own way, about the midlife low. This discussion allows for both tentative conclusions about the reasons for the midlife low to be made along with suggestions for future research.

2. A midlife low in wellbeing?

2.1. The midlife low in wellbeing: cross-sectional evidence

A substantial majority of the published evidence relying on cross-section data finds a midlife low in well-being across working life. A prominent study in this regard is Blanchflower and Oswald (2008), who found a midlife low in 72 different countries spanning four continents at age 46. In general, the investigations finding a midlife low

come from samples from many different countries, taken at many different times, with many different sets of covariates (including no covariates), and generated with different estimation techniques, sub-samples, and a variety of questions eliciting information about well-being. Yet, they all find similar midlife low in subjective well-being. Some examples of articles over the last three decades include the following: Warr (1992), Clark and Oswald (1994), Clark *et al.* (1996), Frey and Stutzer (2002), Blanchflower and Oswald (2004), Blanchflower and Oswald (2008), de Ree and Alessie (2011), Wunder *et al.* (2013), Baetschmann (2014), Cheng *et al.* (2015), Piper (2015), Schwandt (2016), Beja (2018), Clark (2019), Ranjbar and Sperlich (2019), Blanchflower (2020), Blanchflower and Graham (2020), Piper (2021a), Blanchflower and Piper (2022), Blanchflower *et al*. (2022), Kaiser *et al.* (2022).

Cross-sectional support for the phenomenon of a midlife low during traditional working life years does not only rely on individual survey responses about life satisfaction. Other studies have indicated a similar result when using more objective measures. For example, Blanchflower and Oswald (2016) find that anti-depressant use in Europe is at its peak when individuals are in their mid-40s. Daly *et al.* (2011) found that depression, lack of sleep and stress peaks when individuals are in midlife. Blanchflower and Oswald (2008) find a similar pattern with depression: it peaks in the mid-40s. Stress was also found to peak in the middle of life, and hence working life, in many countries around the world (Graham and Ruiz-Pozuelo 2017). Suicides are often more prevalent in midlife than at other times too (Oswald and Tohamy 2017) and so are "deaths of despair" (Case and Deaton, 2015, 2017). Maybe more surprisingly, evidence in favour of a midlife low is also found among great apes (Weiss *et al.*, 2012). Using two samples of chimpanzees and one sample of orang-utans whose well-being was assessed by raters familiar with the animals, a U-shaped pattern is found in raw data and adjusted models.

This is discussed in more detail below when potential reasons for the midlife low phenomenon are considered.

2.2. The midlife low in wellbeing: longitudinal evidence

Longitudinal evidence for the U-shape is less voluminous, but often offers support for a midlife low (Piper, 2015, Cheng *et al.* (2017), Clark (2019), Gondek *et al.* 2020; Clark *et al.*, 2021, Blanchflower and Piper 2022, Oparina *et al.* (2022), Orben *et al.*, 2022, Piper, 2022; Lepinteur and Piper, 2022). In comparison with cross-section studies, longitudinal assessments are more challenging to undertake. A difficulty with longitudinal assessment of the relationship between age and well-being, particularly with fixed effects analysis, is what is known as the age-period-cohort problem. De Ree and Alessie (2012) explore this issue in depth and argue that the effect of a change in aging in annual datasets is similar to that of entering the next wave. Consequently, identifying the age effect in panel data is challenging because it may confound the effect of time.

Some studies solve this problem by not including time dummy variables (i.e. wave dummies) and find a midlife low using fixed effects (e.g. Blanchflower and Piper 2022). Other studies are more creative in addressing this. Building on the work of Van Landeghem (2012), Cheng *et al.* (2017) rely on the straight-line properties of a quadratic function and show a midlife low in three countries (Australia, Germany and the UK). This method has recently been used by Lepinteur and Piper (2022) in showing a midlife low with longitudinal data from a dedicated COVID-19 pandemic dataset focusing on four European countries. Lepinteur and Piper (2022) additionally took advantage of their dataset not being annual, having approximately four waves per year, to obtain precise coefficients for age, in a fixed effects context while also controlling for period (i.e. wave); the coefficients indicate a midlife low. Another study addressed

the age-period-cohort data by using system GMM dynamic panel analysis and found that young people 'slide down a U-shape' of well-being as they age (Piper 2015). Given that this methodology can control for cohort effects, the results finding a midlife low represent a lifecycle effect - i.e. the midlife low is something that, the data indicates, most people go through to some extent or other.. Clark (2019) also provides evidence for a lifecycle effect being behind the midlife low. An investigation of the dynamics of life satisfaction, also using GMM panel analysis, with a multi-year sample from the British Household Panel Survey, also finds evidence in line with a midlife low (Piper 2022). Additionally, some studies consider these issues with machine learning techniques, which also generate findings supportive of a midlife low (for example Kaiser et al. 2022, and Oparina et al. 2022). While these studies control for cohort influences, they do not, however, rule out the possibility of cohort influences in general. One avenue for future investigations could be to explore whether cohort differences influence the relationship between well-being and age.

2.3. The midlife low in wellbeing: a review of work critical to the dominant finding.

The finding of a midlife low has attracted some criticism, sometimes the finding itself, and sometimes claims about its (near) universality. According to Kassenboehmer and Haskien-DeNew (2012), a prominent article in the literature commenting on the midlife low finding, an individual's experience in a survey may confound the relationship between age and well-being. Their hypothesis relies on the fact that (i) individuals often report higher scores in the first few years of a survey and (ii) most new entrants into well-known panel surveys are at the start of adult life. Consequently, this would 'artificially' increase the happiness of the young, perhaps contributing to a midlife low finding. When controlling for an individual's years in the panel and its square, the

midlife low disappears in Kassenboehmer and Haskien-DeNew (2012). However, estimations that simultaneously consider individual's years in the panel and its square on the one hand and age and age-squared on the other hand, as their analysis does, may be problematic. A main reason is that for those who do not drop and return in a panel (most of their panel's respondents), age and experience in a survey are highly collinear. This has been recognised by Blanchflower and Piper (2022). In such a framework, the only way for the effect of age to be independently estimated from that of survey experience is if some respondents drop out and return to the survey. In the German Socioeconomic Panel, this amounts to about 7% of the sample. Given that identification relies on such a small proportion of the survey, many years are needed to estimate the effect of age independently of that of experience with precision. Kassenboehmer and Haskien-DeNew (2012) use 13 consecutive years of the German Socioeonomic Panel and found no midlife low. However, using 36 consecutive years of the same dataset and the same treatment of survey experience, Blanchflower and Piper (2022) did find a midlife low. Rather than having to rely on individuals who drop out and return to the survey, an alternative would be to control for the early years of survey experience using a dummy variable, or as Schwandt (2016) and Wunder *et al.* (2013) do, simply drop the first two years of an individual's data from the analysis. Investigations capturing survey experience in such a way find over working life evidence for, or supportive of (via analysis of a particular age group), a U-shape finding concomitant with a midlife low (Wunder *et al.* 2013; Piper 2015; Schwandt 2016; Kratz and Brüderl 2021; Blanchflower and Piper 2022).

The question of whether control variables should be included has been raised on several occasions (Blanchflower and Oswald 2009; Glenn, 2009; Bartram 2022). If the objective of the researcher is to simply describe the data, it can be argued that the

number of controls should be minimised. On the contrary, a regression including a number of carefully chosen controls should produce estimates capturing the true effect of age and reduce the influence of confounders. This methodological question, although very important in terms of policy implications, is somewhat less of a concern when it comes to detecting a midlife low in subjective wellbeing because it has been found in many unadjusted and adjusted models (Blanchflower and Oswald, 2008, 2009, Stone *et al.*, 2010; Dolan *et al.* 2017, Blanchflower 2020; Blanchflower and Graham 2022).

A part of the literature claims that the midlife low may simply be a statistical artefact deriving from the non-randomness of surviving probabilities at the individual level (e.g. Galambos *et al.*, 2021). From a theoretical point of view, this criticism is grounded because there is a positive gradient between life expectancy and well-being (Danner *et al.*, 2001; Diener and Chan, 2011). Thus, if the effect of well-being on mortality becomes significant in mid-life, the unhappiest are those whose probability of dying first is the highest. As a result, the happiest are more likely to survive and the average of well-being increases with age mechanically. Age would have no effect *per se* and initial differences in life satisfaction would produce a midlife low via mortality. Although this explanation is theoretically reasonable, can mortality fully explain the U-shape between age and subjective well-being? Clark *et al.* (2021) explicitly address this question with a calibration exercise where they first compute the average life satisfaction per age group in UK data, then assign the minimal value of life satisfaction to dead people (according to official UK death rates) and finally recompute average life satisfaction by age groups after including dead people. They conclude that life satisfaction would only marginally decrease after age 55 and there are "not enough" deaths to explain the U-shape. In consequence, the issue of mortality is theoretically

valid but of marginal importance from an empirical perspective. For further discussion of mortality bias see Hudiomet *et al.* (2021).

Another claim against a midlife low relates to the magnitude of the effect of age that may be considered as rather small (Galambos *et al.,* 2021). This is an interesting point because it puts the emphasis on what can be called economic meaningfulness. Galambos *et al.* (2021) make their point by providing two figures - one with a scale between 7 and 8.5, and the same data with a scale of 0 to 10 - and claim that the latter figure with its rather flat line shows that age differences are small, and the age life-satisfaction relationship almost becomes a straight line, and thus not an issue of note. Rather than relying on rescaling, a common practice to assess whether a point estimate is large in a multivariate framework is to compare it to the coefficients attracted by the control variables coming from the same regression. Simply comparing averages, Blanchflower and Piper (2022), observe that the decline in life satisfaction from youth to midlife is *"more than the difference between being married and divorced, about the difference between being married and separated, and about 60% of the difference between working and unemployment"* (p.4). (The quote continues: "The drop is almost as large as the difference in average life satisfaction between those who have trouble climbing up stairs and those who don't; comfortably more than for the difference between those who stayed overnight in a hospital in the last year and for those who didn't; and approximately double that between those who have high blood pressure and those who don't" (Blanchflower and Piper, 2022).). The decline in well-being throughout the working life until midlife is substantial. The next section discusses what is known about the factors giving rise to the midlife low, and offers suggestions for future research.

3. Suggestions for future research

As the previous sections highlight, the author's survey of nationally representative, large sample studies shows that a central feature of well-being during the years of working life is a midlife low. Yet, one central question remains: why are human beings systematically less happy during their midlife? Social scientists still know very little about the reasons behind the midlife low. Understanding the determinants of the U-shape curve is not only important for the sake of sheer knowledge, it is also important from an individual, political and societal perspective. The decline in well-being experienced on average throughout the working life until midlife being substantial, social scientists have an opportunity to do important research here: their work can potentially help to alleviate suffering (or at least loss of well-being) if it attempts to better understand the phenomenon and highlight how people (and policymakers) might be able to mitigate against this suffering. Arguably, given that the declines in average well-being from youth to midlife can be substantial, suffering is not too strong a term for this phenomenon. As the remainder of this section highlights, a complete understanding of the midlife low is likely to need attention from scholars working in many different disciplines and areas (some of which are not discussed below) including economics, psychology, sociology, biology and life history. Each of these areas will no doubt provide useful clues as to why we, on average, suffer a low at midlife. There is much to learn, and a fuller understanding will likely incorporate multifaceted reasons for the midlife low. Scientists have uncovered some clues about it.

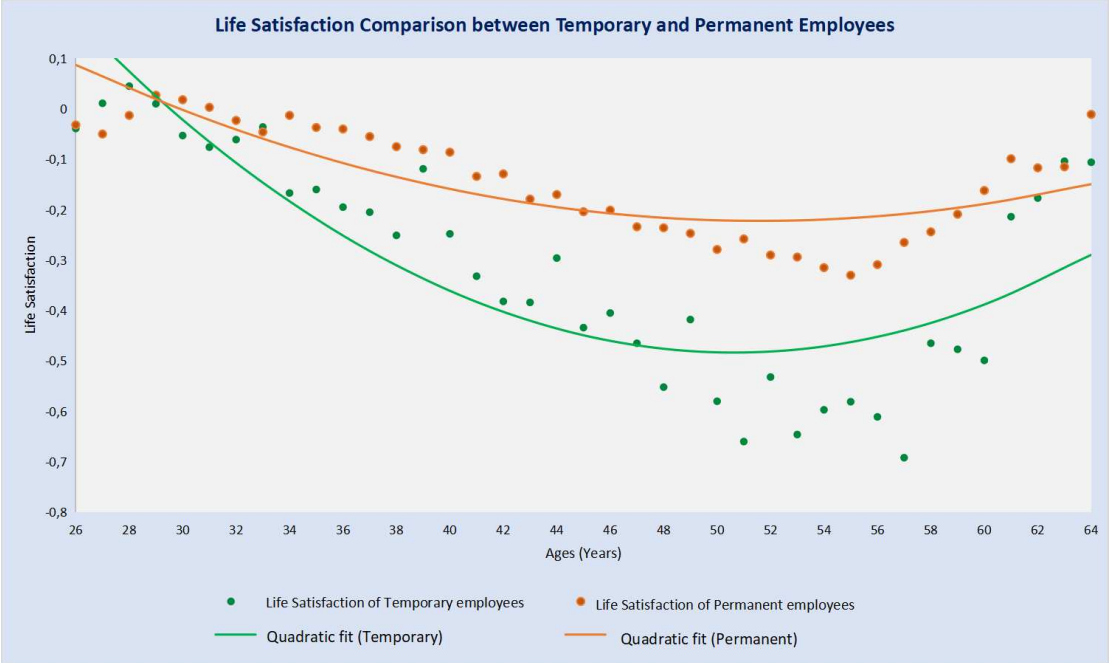
A part of the literature attempted to uncover the explanations regarding the midlife low by making comparisons across population sub-samples. Their objective is to find significant differences between different groups and, in doing so, offer insights to the puzzle of midlife suffering. For example, Helliwell *et al.* (2018) investigated what they call the "social context". Using various well-known cross-section datasets, they find

that people suffer less at midlife if they have a strong sense of belonging. This is consistent with the fact that they find that the marital status, the length of time spent in a neighborhood and the quality of relationships at work all act as moderator of the midlife low. In Clark *et al.* (2021), marriage protects individuals from some of the well-being losses experienced in midlife. In other words, the married have, on average, a less pronounced U-shape or midlife low. The protective properties that marriage has may relate to companionship, a sense of belonging, of feeling less lonely. The studies of Heliwell *et al.* (2018) and Clark *et al.* (2021) seem to point in the same direction: the extent of the suffering at midlife has some connection with a feeling of belonging and support. Future work should investigate this issue in depth.

Similar to the aforementioned sub-sample comparisons, Piper (2021a) investigated differences in well-being over the work life by considering employees on permanent and temporary contracts separately. Using several years of the German Socioeconomic Panel, a clear difference was found with those on temporary contracts suffering a much bigger well-being dip in midlife than those on permanent contracts (see Figure 1 below). Keeping objective characteristics constant, one may argue that the difference in the U-shape between permanent and temporary workers is the feeling of job insecurity. However, Piper (2021a) shows that it accounts for only about one-sixth of this difference. This result suggests that the deeper midlife low experienced by temporary workers captures more than a simple feeling of job insecurity: it may very well due to feelings of failure or inadequacy that stem from unfulfilled aspirations. Schwandt (2016) finds some support for the notion of unfulfilled aspirations. He compared an individual's current life satisfaction and what they five years ago, expected their life satisfaction to be in five years time. In general, younger people overestimate future life satisfaction, and older people underestimate it: a finding consistent with a change in

aspirations. Thus, finding links to work by those psychiatrists (see introductory paragraph for references) who see midlife, in part, as a period of adjusting one's expectations, and coming to accept one's lot in life. Thorough investigations of the role of changes in aspirations in explaining the midlife low is a promising avenue for future research. Another possible avenue for research is offered by a comparison of the work of Schwandt (2016) and the other studies discussed in this section. Do the unmarried, for example, overestimate their future happiness compared to the married? Furthermore, one can easily imagine other groups of different individuals with systematically differently sized lows at midlife and thus test this with modern data sets. Polden (2002), for example, suggests that midlife crisis is a disease of affluence and one particularly prevalent among those with high education. These observations from a psychotherapist can be tested with modern panel datasets. This would generate more evidence that can help us better understand just what is going on at midlife, and how people may traverse this period in their lives with less suffering than they may otherwise have had.

Figure 1: Average Life Satisfaction Against Age, a comparison of Permanent and Temporary employees, SOEP data 1995-2017



Source: Piper (2021a). SOEP data used: Socio-Economic Panel (SOEP), data for years 1995-2017, version 34, SOEP, 2017, doi: 10.5684/soepv34.

While midlife lows may be mitigated somewhat, (perhaps through enjoying more belonging, through marriage, better working conditions and finding permanent employment), fundamentally they may also relate to our biology, being simply a feature of life. A well-known study of the well-being of apes provides evidence that points in this direction. This apes study (Weiss *et al.* 2012) asked experts to rate the well-being of apes in different environments (mainly zoos but also sanctuaries and research centers) in different countries, with four different criteria. Social scientists have to take on trust that the raters were able to reasonably accurately judge the well-being of apes. One may question how well anyone can decide upon how happy an ape is. Or question the usefulness of, as one of the criteria refers to, knowing how happy a rater would be if they were the ape for a week. The other criteria are as follows: the degree to which the apes were in a positive versus negative mood; how much pleasure the apes get from

social situations; and how successful the apes are in achieving their goals. Despite concerns non-experts (like the authors of this chapter) may have with measurement, this is a noteworthy, creative and commendable piece of research helping us to learn more about a midlife low Perhaps the U-shape is simply something that we all go through biologically, a simple part of life. (A counterargument though is that presumably apes have social relationships too, and it might be these driving the result and not biology). This notion of a biological (partial) explanation has been recently supported by an article on the neurobiology of happiness too (Esch 2022), a "conceptual review [which] provides an overview of the basic neurobiological principles behind happiness phenomena… [which finds] as a result, the development of happiness and satisfaction over the course of life typically takes the form of a U-curve." (p.1) That it might be universal, and that individuals may also experience it differently was put forward over 50 years ago: "each of us goes through it in his own way, experiences it with greater or lesser intensity, and emerges from it more or less reconciled to the years ahead. It is a "natural" developmental crisis, and it is unavoidable" (Fried, 1967, vii). The key tasks for future research are to both to explore and understand the universality, and highlight systematic differences regarding how different groups go through it.

Other research has demonstrated that midlife lows may have a long history. For example, long-term studies from medical science, predating much of the work of economists regarding human well-being, have investigated the link between our nascent years and midlife. In short, they indicate that our childhoods and young adult lives can have an impact on our mental and physical health in midlife. Using the Johns Hopkins precursors study, Thomas and Greenstreet (1973), found links between individuals with a lack of childhood closeness to parents to a higher likelihood of

committing suicide, developing mental illnesses, high blood pressure, coronary heart disease and cancer by midlife. Similarly, Russek and Schwartz (1997), using different long term data, a 35 year follow up of the Harvard Mastery of Stress study, demonstrated that perceptions of parental caring predict health status in midlife. Plausibly, differing experiences in childhood may well be another factor regarding who traverses the midlife low relatively comfortably and who does not. These findings, with their midlife physical and mental health concerns, clearly shows that the midlife low is an important aspect of human well-being and experience, and again support the argument made above that a multi-faceted approach is needed to learn more about its causes, consequences and how it might be mitigated (even if only partially).

Summary

Getting towards understanding the dominant feature of well-being over the working life, the midlife low, better will likely require the efforts of scholars from many disciplines. As well as our current life, including job and relationships situation, our expectations (now and formed in the past), simple biology, our life histories, all seem play a part in our well-being at midlife. Further reflecting this diversity in the causes, consequences and correlated of a midlife low is sustained work in this area by psychologists and psychotherapists, and by those in other disciplines.

Further clues for the puzzle of midlife lows may arise from country comparisons, or from looking at individual age groups, rather than the whole of life. While there is the potential to get into semantics and discussions about differences between different datasets, different country results are interesting and further research can also provide further information on when, why and how people enter a midlife low. It was noted above that this seems later in Germany than many other countries, and future research

could investigate why this might this be. One possibility might relate to family structures and that the children of parents (in approximate midlife) in Germany in general take longer to finish their education. Given findings regarding what happiness means to people at different ages, and interest in well-being over the working life more generally, it is worth considering different age ranges (Mogliner *et al.* 2011; Piper 2015). This is more prevalent in other disciplines than economics (for example, psychology with their focus on emerging adulthood, and the field of gerontology). Furthermore, this may also uncover better understanding about particular issues that people have at different parts of life, e.g. the quarter-life crisis (Robins and Wilner 2001; Barr 2005) and any suffering caused by the children leaving the parental home (Nauck 2017; Piper 2021b) may help to further unpick distinctions between cohort and ageing explanations for changes of well-being. or lifecycle distinctions. Different age groups also circumvent issues arising from including people 15 years old and at least 85 years old (and older) in the same regression (e.g. Bartram 2022).

As well as being intellectually interesting, policy conclusions arise from the finding of a midlife low and its potential (partial) remedies. A lack of belonging, for example, could be addressed in the workplace, and by local and national governments. Company HR policies can improve inductions and engage in team building exercises, make temporary staff permanent, and as Helliwell *et al.* (2019) show, promote and incentivise more inclusive management styles and practices. Given the benefits of more well-being from happier workers and the life and work experience people have at midlife, substantial benefits for companies could accrue (De Neve *et al.* (2013)). Local governments can enhance community engagement and cohesion, and national governments can penalise excessive use of temporary staff, and incentivise the use of

permanent contracts. With more research, and more understanding of the phenomenon of midlife lows, more policy responses will emerge.

A midlife low is the dominant feature of well-being over the working life (Given the weight and breadth of evidence, it seems almost impossible that the notion of a midlife low will be firmly refuted in the near future) . If it is an aspect of our natures, as many scholars and arguments from different disciplines suggest, efforts should be directed towards understanding it more and helping to advise on mitigating any suffering experienced during this phase of life. In this way lies much opportunity for social scientists to do some good.

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Retirement and Well-being

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