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ABSTRACT

Female Suicide and the Concept of the Midlife Crisis*

The idea that humans – especially females – are prone to some form of 'midlife crisis' has typically been viewed with extreme skepticism by social scientists. We point out the potential equivalence between an age U-shape in a new well-being literature and a matching hill-shape in especially female suicide risk (evident in 28 countries and visible in the United States even 30 years ago). This concordance between two currently separate kinds of evidence, including a result on non-human primates, is apparently not known to many researchers or public commentators. It may be necessary to reconsider traditional thinking on the midlife crisis.

JEL Classification: I12, I31

Keywords: happiness, aging, suicide, well-being, GHQ, mental-health, depression, life-course

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The idea that humans have a 'midlife crisis' was proposed in the 1960s by Elliott Jaques [1]. Jaques argued that at midlife the typical person starts to foresee death and to evaluate the meaning of their own life. For half a century, the idea met skepticism, and sometimes derision, from scientists [2, 3, 4]. In public discussion, however, the idea gained ground. One careful interview study [3], of 724 randomly selected Americans, found that by the age of 50 approximately one third of citizens said they had experienced a midlife crisis. Nevertheless, that study's author remained unmoved. The study concluded that public opinion should be disregarded, that "epidemiological study of psychological distress…does not suggest that midlife is a time of out-of-the-ordinary distress" [3, p.87], and that the idea of a midlife crisis is a myth. [3, p.101]

New research has begun, if only indirectly, to take the midlife nadir more seriously. There is growing cross-country evidence consistent with the existence of a middle-age low and a well-being 'U shape' through the majority of the life cycle. A recent study of 350,000 individuals in the United States, for example, sketches the cross-sectional pattern of Americans' reported well-being levels [5]. Its data come from random digit dialling in which, among other questions, people were asked "Please imagine a ladder with steps numbered from 0 at the bottom to 10 at the top. The top of the ladder represents the best possible life for you, and the bottom of the ladder represents the worst possible life for you. On which step of the ladder would you say you personally feel at this time?" The pattern traced out [the authors' *Figure 1* in reference 5] is strikingly U or V shaped, with its minimum reached around the start of people's 50s. The mean global-wellbeing value falls from 7.2 to 6.3 on a ten-point scale; that is a large movement when appropriately scaled and considered next to other life events. The study makes the point that some other constituent kinds of emotions, like anger, follow other trajectories.

It might be thought that to inquire into mental well-being in this way is artificial and unpersuasive. However, such U-shapes have been found with a range of subjective measures (including overall happiness and life satisfaction) and in a large number of countries and time periods [6, 7]. Exceptions exist, admittedly, in the published literature [8]; yet exceptions are now in the minority. The midlife-low pattern has also been validated with psychiatric scores [6, 9] and antidepressant consumption [10]. Nor is the U of minor

magnitude; from high to low it is typically of the same emotional consequence as divorce [6, 7]. A well-being U-shape has recently been noted in a study of great apes [11]. The U is now attracting public discussion [12].

Some previous work has controlled for the important possibility of cohort effects [6] and still found evidence of a midlife nadir. More recently, U-shaped well-being has been established in genuine longitudinal samples on thousands of individuals in the UK, Germany and Australia [13, 14]. Nevertheless, much remains to be understood, and longer and larger longitudinal samples are desirable.

The scientific explanation for the U-shape is currently unknown. It may be linked to thwarted life aspirations [13], and there must presumably be some kind of connection with health [15]. It cannot be blamed on young children in the home or on marital breakdown or on midlife unemployment; controlling for these, statistically, makes little difference [5, 6, 7].

Critics can also argue that showing lower 'happiness' levels in midlife might be of interest but is not the same as establishing Jaques's idea of a real crisis. Such a concern is reasonable; it spurred the current paper.

The contribution of this paper is to point out a little-known equivalence in two types of international data. One is on hill-shaped suicide patterns. The other is on U-shaped subjective well-being. One particular paper, which may one day be recognized as ahead of its time, appears to have noticed the potential equivalence between two different literatures [16]. However, the authors looked solely at US data and mentioned the age pattern only in passing. Another paper [17], which we learned about after the initial draft of this one, has also examined these issues. It documents some evidence of a hill-shape in suicide, although its authors remain doubtful of any general form of match between suicide data and (minus) well-being scores, and it, also, examines only US data. An interesting earlier paper [18] was more sympathetic to the idea of a match, but its focus was not upon age patterns.

Here we hope to draw the attention of many different kinds of scientists and policy-makers to the puzzle of the hill-shaped pattern of Figure 1 below. As the conception of a midlife crisis is sometimes thought of as distinctively male, we deliberately report data on US females. It can be seen in Figure 1 that the risk of suicide among American women in their early 50s is approximately double that of those aged in their 30s or 60s. Although it is not well-known, even to social scientists, the same hill shape -- see the Appendix -- can be found in US female suicide data for the year 1980; hence this pattern is <u>not</u> new, although cohort patterns in

suicide data do exist [19]. Male data are, in modern data, broadly similar to the patterns described in this paper, although (especially in US data, though not, for example, in UK data on males) there is a large spike up right at the end of life, consistent with the decline in very-late life scores in subjective well-being scores [6], where a U-shaped part of the well-being trajectory is known often not to fit the data among the very old. Our current data collection, which is ongoing, is on earlier male and female patterns, and on an evaluation of cohort effects.

We currently do not believe that evidence for a female suicide midlife crisis is strongly related to the fact that women pass through menopause while men do not. Although in many countries there is evidence that very old men kill themselves at a substantial rate, there is also evidence of a local midlife peak in male suicide. We hope to discuss such issues in future work.

Overall, it does not seem to be widely realised is that the same midlife hill-shape in female suicides exists in a large number of industrialized nations (we have collected data on 28 and the aggregated unweighted hill-shape is similar to that here for the US), including Canada and the United Kingdom. These plots are available in the Appendix. What is not clear is the best way, scientifically, to define a concept befitting the extreme words 'midlife crisis'. Reasonable scientists can reasonably disagree. Partly, moreover, the issues here are philosophical ones [20] and relate to issues of the rationality or irrationality of suicide [21].

Nevertheless, it seems natural to accept one point: human beings who take their own lives around the age of 50 have experienced a crisis. Mr Jaques's [1] often-criticised concept of a midlife crisis is supported by two complementary kinds of evidence and requires analytical attention.

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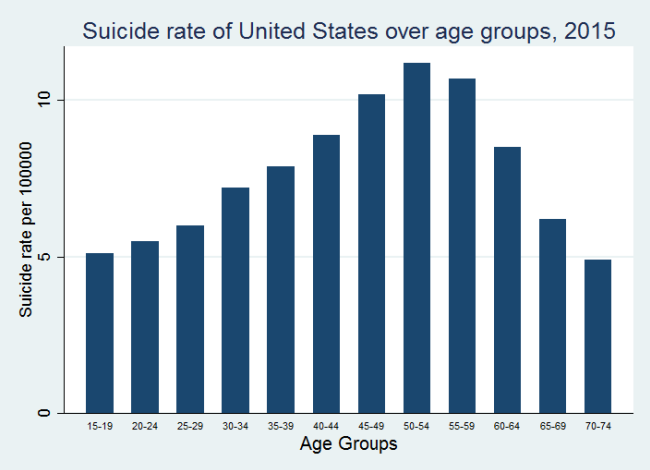
Figure 1

The modern pattern of female suicide in the United States

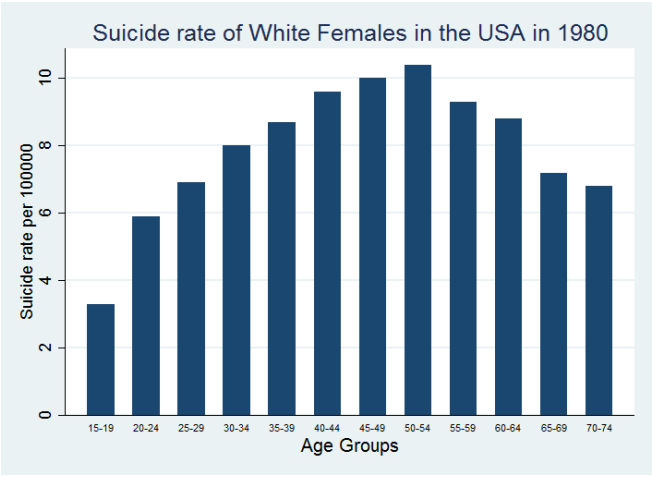


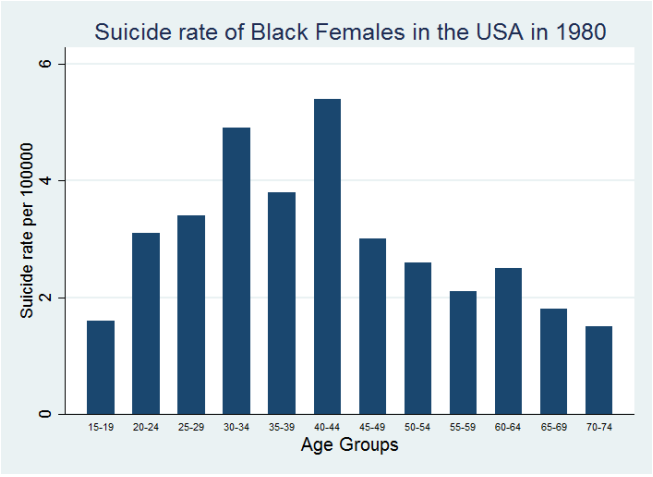
Source of data

Centre for Diseases Control and Prevention (2015). Multiple Causes of Mortality Database. Available from https://wonder.cdc.gov/MCD.html [Accessed on 19/02/2017].

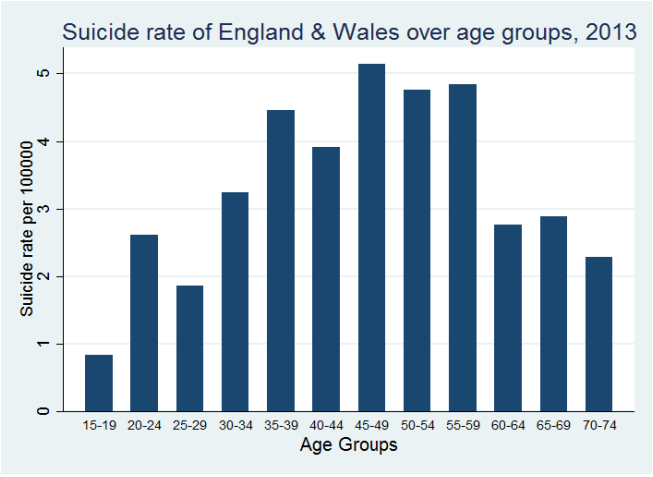
APPENDIX MATERIAL

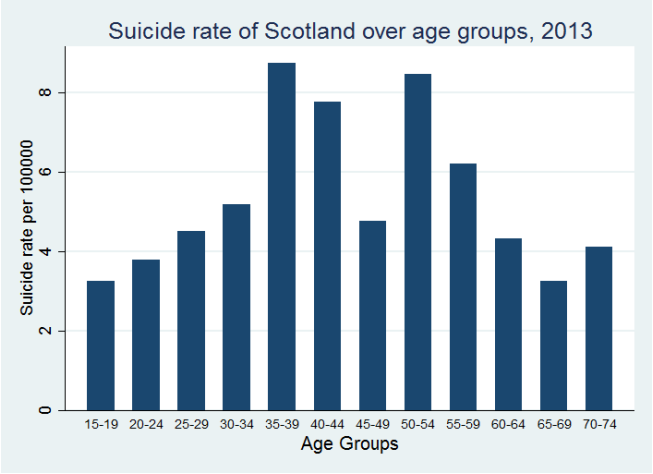
The same hill-shaped pattern existed in 1980 in female suicide in the United States

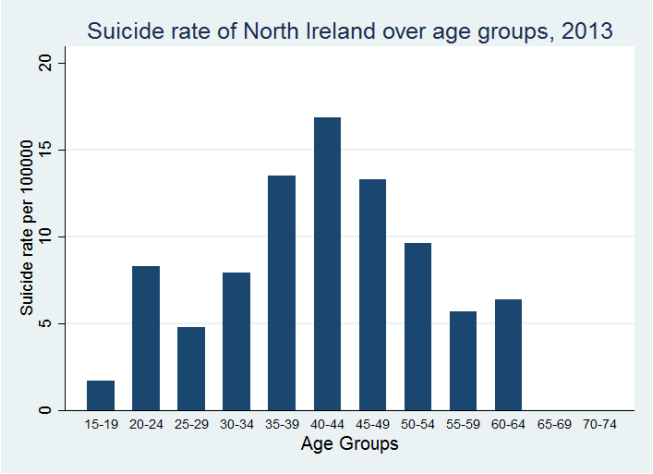




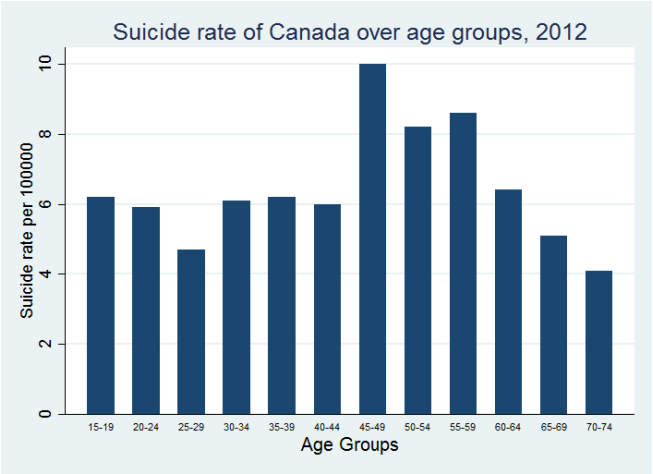
The modern pattern of female suicide in the UK



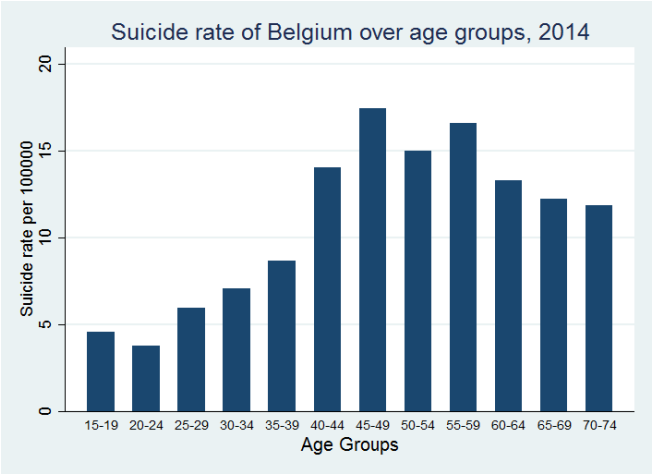




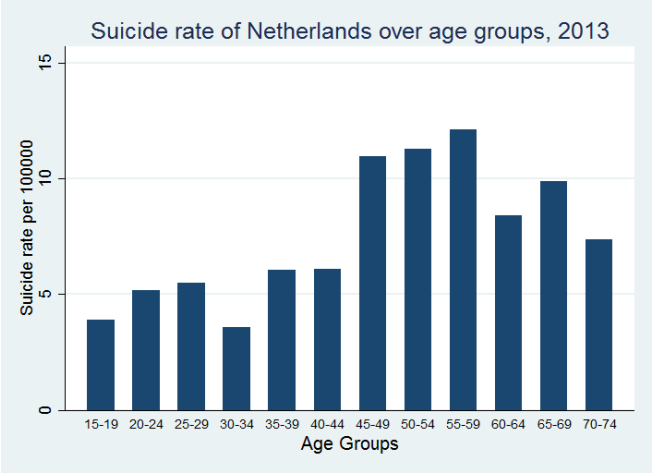
The modern pattern of female suicide in Canada



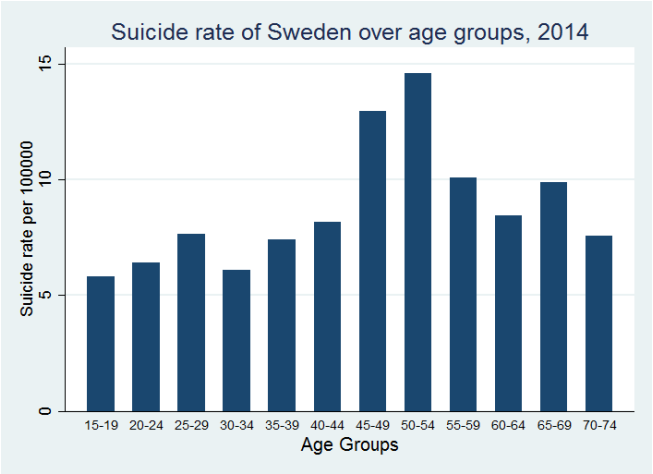
The modern pattern of female suicide in Belgium



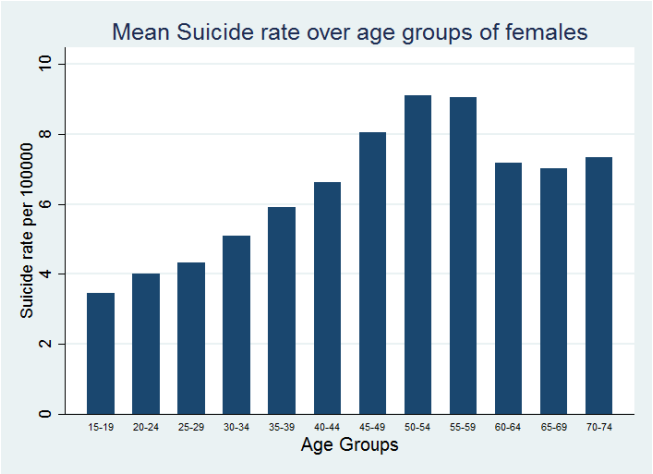
The modern pattern of female suicide in the Netherlands



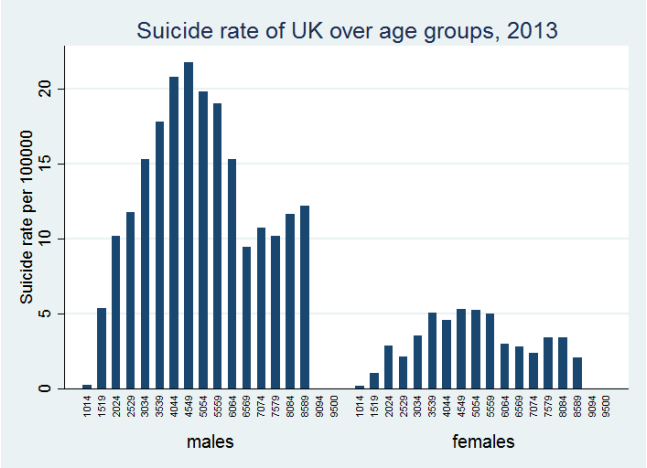
The modern pattern of female suicide in Sweden

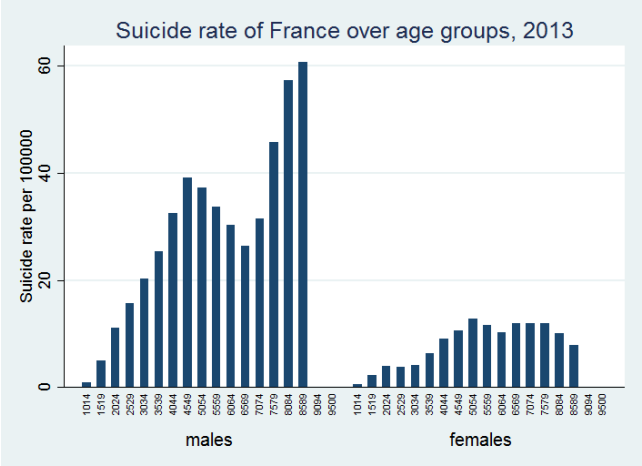


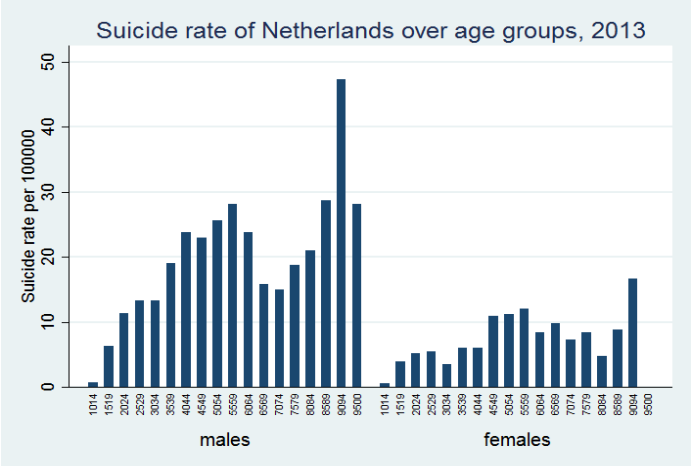
The modern pattern of female suicide aggregating across 28 industrialized nations (This diagram is not weighted by country size; it thus gives equal weight to a large country like the USA and a small country like Ireland. Weighting by country size produces an even more pronounced hill-shape).



Some data on males and females over a full span of years (an illustration of the tendency to a late-life male spike)







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Countries in the Full Sample

Australia	Ireland	Slovakia
Austria	Israel	Slovenia
Belgium	Italy	Spain
Canada	Latvia	Sweden
Czech Republic	Netherlands	Switzerland
Denmark	New Zealand	USA
England & Wales	Northern Ireland	
Finland	Norway	
France	Poland	
Germany	Portugal	
Hungary	Scotland	
USA		

Countries in the English-Speaking sample

Australia	Ireland	Scotland
Canada	New Zealand	USA
England & Wales	Northern Ireland	