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Perspective

Life-history data

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Key points

- Life-history data enable the duration, timing and ordering of events to be brought to the foreground of analysis
- Extending the scope of lifecourse research, life-history data make it possible to examine the long-term effects of past policies with more precision and detail
- Lifecourse analysis holds a large promise for health research, because it enables an investigation of the connection between an individual and their historical and socio-economic context

Abstract

Life-history data are quantitative, retrospective and autobiographical data collected through event-history calendars. By mimicking the structure of our memories, these instruments can gather reliable information on different dimensions of the lifecourse. Life-history data enable the duration, timing and ordering of events to be brought to the foreground of analysis. Extending the scope of lifecourse research, life-history data make it possible to examine the long-term effects of past policies with more precision and detail.

Introduction

Lifecourse analysis holds great promise for health research, because it enables an investigation of the connection between an individual and their historical and socio-economic context. Quantifying the influence of different life stages also has important policy implications, because we can examine the impact of past policies. Specific transitions as well as more holistic lifecourse trajectories are key to understanding how our environment influences our health and wellbeing. One important issue is how to efficiently collect reliable, large-scale retrospective information on the occurrence, timing, duration and ordering of events in multiple life domains. An event-history calendar is a tried, tested and continually refined method that allows us to do so.[1,2] In this paper, we illustrate the type of research questions that can be addressed with these data, focusing on practical research applications rather than technical detail.

How? The event-history calendar

Answers to retrospective questions are deemed unreliable, because people might not exactly remember things the way they were, or might remember them more positively than they were.[3] Importantly, trying to make sense of our current circumstances might influence how we remember the past. One reason for this is because our memory stores autobiographical knowledge not as segmented and isolated pieces of information, but as a hierarchical, sequential and interrelated network of events.[4] Mimicking this structure by using a calendar rather than separate questions, an event-history calendar

effectively minimises recall error and bias in four ways. Firstly, it works hierarchically by mapping thematic timelines. Secondly, it works sequentially and in parallel by merging several dimensions of the lifecourse together at key transitions, which stimulates relating an event in one domain to the state of other domains. Thirdly, it stimulates interrelated information gathering by anchoring the individual timeline of the respondent to specific historical events, because a person might remember their personal circumstances better when they are contextualised. Finally, in contrast to prospective event-history collection methods, the issue of censoring and missingness is minimised, because respondents do not drop out of a questionnaire module as time progresses.

The event-history calendar has been shown to be more reliable than standard survey approaches when it comes to complex autobiographical data, and to yield higher response rates.[4] It is also adaptable to different modes of information gathering.[5]

Why? Duration, timing and ordering

The primary innovation of life-history data lies in the analytical possibilities it enables, and less in its enhanced reliability, flexibility of collection and representativity. A lifecourse perspective, which acknowledges the explanatory power of personal and chronological histories, can yield deep insights by collecting information on the duration, timing and ordering of exposures.[6,7]

Duration

One way in which life-history data can enrich analysis is by giving an accurate estimate of duration of a state. In the logic of cumulative (dis)advantage, inequalities are expressed over time, not instantaneously.[8] Small differences in an initial observation can develop into large disparities in health, wealth and wellbeing over time.[9] Accurately capturing the duration of exposure to potentially damaging environments – such as accommodation, precarious employment or intimate relationships – in this way is an essential step to understanding the limits of human resilience to adverse circumstances. It allows investigation of the extent to which a dose–response type relationship exists between the stressor over the lifecourse and the outcome under study. Duration of a state as a separate, isolated piece of information can be used straightforwardly as an explanatory variable. Alternatively, the duration of a period (or the time that passes until an event happens) itself can be analysed using a family of statistical methods, which are often placed under the umbrella label of event-history analysis.

Timing

Closely interlinked with the idea of duration is the idea of timing. When an event happens can be crucial for the impact it has in the long term – an idea that lies behind the concept of critical period and most research on scarring early-life effects.[10] Alongside the occurrence of the event itself, unfavourable timing can set in motion a cascade of knock-on effects that negatively influence the outcome. For example, giving birth to a child as a teenager in itself is not detrimental to health and wellbeing, but can disrupt educational and occupational trajectories, having negative effects further down the road. As such, studies can investigate whether the effect of childbirth on wellbeing varies by age at delivery. Event-history analysis has been developed to analyse the timing of events and the factors influencing differences in timing.

Ordering

A holistic use of life-history data analyses entire trajectories through sequence analysis. Instead of focusing on a single isolated event, sequence analysis looks at what came before and what happened afterwards. Being unemployed at age 24 after working for 2 years is not the same as being unemployed at age 24 and then working for 2 years. Sequence analysis – a way to explore these patterns – can guide our understanding of the variation within and between lifecourses, and answer questions about the extent of differentiation and de-standardisation, respectively.[11,12] In a second step, similar sequences can be grouped together, and these groups can be used as explanatory typologies in a statistical model. For example, the type of occupational career and timing of retirement have been shown to have an influence on later-life wellbeing, which strongly differs between genders.[13]

Policy

Life-history data are a big step forward in analytical terms for research, but what do they mean for policy? Long-term policy effects are often seen as a contradiction in terms, because policies tend to change over time, are, at most, aimed at medium-term effects, and they tend to be evaluated in the short term. More large-scale life-history data allow us to evaluate the long-term effects of past policies on individuals and entire generations. By closely examining the lifecourses of specific cohorts through the prism of periods that are thought to have had a strong influence, these shrouded long-term policy effects can be made visible. To what extent does the abolition of university fees lead to more social mobility? Did the widespread unemployment of the early 1980s disrupt lives permanently? Life-history data can help us unravel these types of questions, while at the same time highlighting unintended consequences and later life sequelae of different types of working and family lives.

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Competing interests

None declared

Author contributions

BV developed the concept and drafted the paper. JN completed the revisions.

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