



The transmission of longevity across generations: The case of the settler Cape Colony

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Abstract

Evidence on long-term multigenerational dynamics is often inadequate as large datasets with multiple generations remain very uncommon. We posit that genealogical records can offer a valuable alternative. Rather than exploring the intergenerational transmission of socioeconomic status, we rely on birth and death dates of eighteenth and nineteenth century settlers in South Africa's Cape Colony to estimate the intergenerational transmission of longevity. We find that there is a positive and significant association between parents' and offspring's life duration, as well as between siblings. Although these correlations persist over time, the coefficients are relatively small. While the effect of grandparents' longevity on that of grandchildren is insignificant, the cousin correlations suggest that inequality in longevity might persist across more than two generations. We suggest that family and environmental factors shared by cousins, beyond grandparental longevity, can explain these results.

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1. Introduction

The literature on parent–child correlations in socioeconomic status provides little evidence on long-term multigenerational dynamics. This is because most studies of intergenerational status persistence are based on two (at most three) successive generations. Historical data offer a unique opportunity to study the evolution of demographic and socioeconomic outcomes across multiple generations. In particular, the use of historical data makes it possible to trace family lineages over long periods of time thereby allowing the

estimation of multi-generational effects in addition to the well-studied parental effect. This paper uses archival information from the Cape Colony to reconstruct intergenerational linkages across European settlers in South Africa from 1652 to 1850. Genealogical records on more than three-thousand families over two centuries provide the foundation to our analysis. Although such genealogical data are very rich in individual information on major life events (e.g. birth, marriage, and death), they often provide few, or no, socioeconomic variables. Our focus will be in examining the intergenerational association in longevity as an informative alternative to the typical socioeconomic variables examined in 'small *t*' datasets.

While there are extensive literatures on income and education, and some authors have considered how parental values of these variables affect children's health

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(see for instance the work by [Thomas, 1994](#)) little attention has been paid to correlations in health measures themselves. As discussed by [Ahlburg \(1998\)](#), such studies are more common in the medical and demography literatures. Of particular relevance to the present paper is a cross-disciplinary literature, discussed below, on the intergenerational transmission of *longevity* dating back to the work of Karl Pearson and his student Mary Beeton in the late 19th century ([Beeton & Pearson, 1899, 1901](#)). This literature, however, focuses on genetic transmission of longevity and attempts to minimise linkages with socioeconomic factors by favouring small, homogeneous sub-samples of populations. Our interest here, by contrast, is examining transmission of longevity – like education or health outcomes – as an outcome of interest in its own right.¹

In the first part of the paper, we describe the data reconstruction process and provide descriptive evidence on long-term patterns in longevity. In the second part of the paper, we estimate two standard measures of intergenerational persistence. Our findings indicate that there is a positive and significant correlation in longevity across two generations (or across siblings) and we locate these estimates within the literature in other disciplines on longevity transmission. In the final part of the paper, we make use of the family lineage information in our data to analyze long-term trends and multigenerational family effects. While the effect of grandparents' longevity on that of grandchildren is insignificant, the cousin correlations suggest that inequality in longevity might persist across more than two generations. We suggest that family and environmental factors shared by cousins (beyond grandparental longevity) can explain these results. In addition, we find evidence of decreasing intergenerational mobility over time. This result complements findings in the historical literature of South Africa documenting increases in cross-sectional inequality over the same period, though more evidence is needed to directly address this link.

2. Life in the Cape Colony

European settlement in South Africa dates to 1652 when a small group of Dutch East India Company officials, sailors and soldiers arrived to establish a refreshment station for the ships sailing between Holland and the East Indies. Jan van Riebeeck, the first commander, built a small fort and immediately planted

cereals and a vegetable garden to secure provisions for passing ships. Van Riebeeck had hoped to trade cattle with the indigenous Khoe, a nomadic, pastoral people that had used the Cape peninsula as grazing in the winter months, but attempts at constant exchange were less successful. Five years after arrival, having made little progress with providing the necessary provisions, Van Riebeeck opted to release nine Company servants as free farmers around the fort. This would start a process of settler expansion and colonisation into the South African interior that would continue, at variable speed in a Northern and Eastern direction, until frontier farmers met the isiXhosa at the end of the eighteenth century at what became the Eastern border of the Cape Colony.

Van Riebeeck's first farmers suffered as their intensive agriculture had failed. After a few decades, most of the Cape peninsula that was supposed to house thousands of settler families was inhabited by several dozen cattle farmers. Further expansion into the fertile Stellenbosch (1679) and Drakenstein (1685) districts, coupled with the inflow of more than 150 French Huguenots fleeing religious persecution gave the region "more truly than before the contours and substance of a colony" ([De Kiewiet, 1941](#): 6). After the Huguenot arrival in 1688/89, growth in settler numbers came mostly from high fertility rates.

Although the early poverty of farmers caused Company officials, in 1717, to recommend that immigration to the Cape be discouraged, the Company decision, three years earlier, to allow farmers to rent land beyond the mountain ranges that separated the fertile south-western Cape from the more arid interior, made the relatively free land attractive to both Company servants that had served their contracts and young adults born at the Cape. The Khoe, suffering from the effects of a severe smallpox epidemic in 1713 and from the superior weaponry of the settlers, either retreated into the interior, or were forced to work on settler farms, becoming *de facto* slaves ([Penn, 2005](#)). Khoe labour, and slaves imported from regions on the East African coast, notably Mozambique and Madagascar, and across the Indian Ocean, including India, Malaysia, Indonesia and China ([Shell, 1994](#)), provided the settler farmers with an inexpensive labour force that allowed them to become productive wheat and wine farmers in the south-west Cape and pastoral farmers in the interior ([Fourie, 2013](#)).

Settler farmers managed to attain relatively high standards of living ([Du Plessis & Du Plessis, 2012; Fourie, 2013](#)), exceeding those of settler colonies in the North America territories and comparable to societies in England and Holland, the two wealthiest countries of the eighteenth century ([Fourie & Uys, 2012](#)). [Fourie and Von Fintel \(2011\)](#) use tax returns to calculate income

¹ The paper by [Kolk \(2014\)](#) also focuses on a demographic outcome by analyzing the intergenerational transmission of fertility.

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