SOCIAL MOBILITY IN MULTIPLE GENERATIONS (Extended Abstract)

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Background

Most research on intergenerational social mobility and other intergenerational processes assumes that these processes can be fully summarized by the associations between the characteristics of people in two generations, that is, individuals and their parents or children. Although individuals and their families carry a longer legacy, we typically assume that its influences are Markovian; that is, that the effects of earlier generations, including grandparents and earlier generations, work entirely through the parental generation. This assumption is seldom examined, nor do we often recognize that its validity may vary systematically across time and place. We tend to concentrate on intergenerational effects almost exclusively across only two generations – despite the possibility that historical events, social policies, and the social circumstances of families in one generation may ramify across several subsequent generations. Even in a Markovian world, these ramifications are hard to predict when fertility, marriage, and mortality vary across socioeconomic groups. Some families live many generations whereas others die out – and this may vary with their prosperity. Social and demographic reproduction combine in a complex way.

Mare's 2010 PAA Presidential Address (Mare 2011), speculates about the mechanisms for possible multigenerational effects and the conditions under which these effects are strongest. The mechanisms are diverse, including kin availability and norms, inheritance of nonperishable wealth, social isolation, generation-skipping trusts, and slavery, among other institutions. Multigenerational effects may be strongest when groups are relatively isolated. For intergenerational socioeconomic mobility, this is likely to be at the tops and bottoms of socioeconomic hierarchies. Further, intergenerational social reproduction, whether across two or multiple generations, includes differential fertility and mortality of social groups. These ideas motivate a research agenda in which we examine intergenerational socioeconomic (education, occupation, income, wealth) mobility using data over three or more generations, that we attend to heterogeneity of mobility processes at the top, middle, and bottoms of hierarchies; and that we study mobility and net fertility together. This paper reports some progress on this agenda.

Outline of Paper

Part 1 discusses the Markovian assumption in mobility research, evidence for and against it, interpretations of non-Markovian effects, and where and when non-Markovian effects are likely to be strongest. Illustrative analyses drawn from social stratification data that include information on more than two generations will be presented, including data from Central Europe, South Africa, China, and the United States (Szelenyi and Treiman 1994; Treiman, Moano, and Schlemmer 1996; Treiman and Walder 1998). Part 2 contrasts the effects of grandparents or other fixed kin relations with the effects of the remote past, which may not be a fixed number of generations removed from an individual. For example, persons who descend from slaves may suffer acute disadvantages many generations later. Similarly, the descendants of individuals who have amassed great wealth may benefit for many subsequent generations. We provide illustrative analysis from the descendants of the grandfather of the founder of the Qing Dynasty, and a more generally representative population from Northeastern China, that spans generations from the 18th to the mid-20th century (Wang, Lee, and Campbell 2010; Campbell and Lee [forthcoming]). Part 3 discusses multigenerational effects that result from differential fertility, mortality, assortative mating, and migration.

Preliminary Results

Part 1 – Grandparent Effects

In work so far, we have estimated simple models for grandparent effects in samples for several populations that have varied substantially in their institutional arrangements. In Communist era China and Apartheid era South Africa our preliminary analyses of three-generation survey data show significant grandfather-son associations net of father for linear-by-linear associations of educational attainments in Poisson (loglinear) association models. In both societies, the net associations of grandfather and son are significant, although the association is much larger in South Africa than in China. (Detailed results are not shown here because of space limitations.) In ongoing work, we will extend these estimates by (1) controlling for a larger number of father's characteristics; (2) examining other dimensions of social position, such as occupation; (3) incorporating the effects of differential fertility (using models that are discussed below); (4) and examining additional populations including Central Europe, where pattern of mid-20th Century social change may induce grandparent effects for some birth cohorts, and the United States, where prior research has found very little evidence of grandparent effects.

Part 2 – Longer Term Legacy Effects

Although most prior research on multigenerational effects has focused on the possibility of "three-generation," that is, grandparent effects, other types of multigenerational effects are possible. In particular, the legacy of prior generations may not be confined to the effects of the characteristics of kin of fixed difference in generations. Rather, hardship or extreme advantage at a relatively variable number of generations in the past may affect descendants, provided that the hardship or advantage is particularly extreme. To investigate this, we examine a population that enjoyed, within its historical context, extraordinary advantages, namely the emperors of the Qing dynasty and their male kin. We use an extraordinary set of archival data assembled by Lee and colleagues (Wang, Lee, and Campbell 2010). They consist of all male descendants of the grandfather of the founding emperor of the Qing dynasty, a total of 83,256 persons. For each male reaching adulthood, they record whether he was an emperor and whether he held a high level government position. Our analysis is based on the approximately 21,000 descendants who were born between 1549 and 1850; survived to adulthood; and have recorded numbers of sons surviving to adulthood, occupational position, father's occupation, and grandfather's occupation.

This is a particularly advantaged population yet, by definition, many members of this population experienced both downward and upward mobility. Additionally, men in this population vary in how many emperors appear in their direct male line of ancestors. Descendants of the grandfather of the first emperor who are nonetheless not direct descendants of the first emperor himself (because they are direct descendants of one of the first emperor's brothers) have zero emperors in their ancestry. Among direct descendants of the first emperor, include men who vary in their number of ancestral emperors. In view of the extraordinary access to wealth, power, and marriage partners that the Qing emperors enjoyed, we conjecture that men directly descended from a large number of ancestral emperors enjoy a persistent advantage over those descended from fewer emperors. This idea is explored in analyses shown in Table 1, which shows the net associations of a man's father's, grandfather's, and great grandfather's occupational positions on his own position, as well as the net association of his occupational position with his number of direct ancestral emperors. These estimates suggest that, Qing dynasty descendants not only display substantial non-Markovian effects (of grandfathers and great grandfathers), but also remote ancestral effects. Men with three or more – and especially four or more ancestral emperors enjoy a particular advantage, even controlling for the position of more proximate ancestors. In our ongoing work, we are exploring the robustness of these results to alternative model specification and adapting similar models to multigenerational data for more general populations that are available for Northeastern China for the past two centuries.

Part 3. Joint Mobility-Fertility Effects

We can also examine the effects of parent, grandparent, and ancestral statuses on net fertility. The Qing Dynasty descendant population exhibits substantial differential fertility, because of the extraordinary reproductive advantage enjoyed by emperors and other high government officials and because of the institution of polygamy. Table 2, which presents negative binomial regression models for numbers of surviving sons born to men who vary in their own, father's, and grandfather's occupation, as well as by number of ancestral emperors. Our estimates suggest substantial net fertility differentials by one's own occupational status, but not by father's or grandfather's occupation. However, there are also enduring effects of having a large number of ancestral emperors.

The longer run impact of socioeconomic inequality works through both intergenerational transmission of status and also the reproductive advantage of some groups. To examine this we combine the results of Tables 1 and 2, using a model of intergenerational reproduction (Mare and Marlani 2006). In this model,

$$S_{k|j} = F_j r_j p_{jk}$$

where S_k denotes the number of men in the offspring generation who are in occupation k, F_j denotes the number of men in the paternal generation who are in occupation j, r_j denotes the expected number of children born to a man in occupation j, and p_{jk} denotes the probability that a son born to a man in occupation j will survive and enter occupation k. The fertility term r_j and the occupational mobility term p_{jk} are the dependent variables in models of intergenerational influence. For the i^{th} individual,

r_{ij} = H(position, father's position, etc.; # of ancestral emperors; generation)
p_{ijk} = G(positions of father, grandfather, great-grandfather's; # of ancestral emperors)

where H and G are negative binomial and logit functions respectively, illustrated in Tables 1 and 2. This model can show the separate contributions of intergenerational mobility and differential net fertility to the reproduction of the occupational structure. Based on the model of ancestral emperor but no grandfather or great-grandfather effects shown in Tables 1 and 2, we decompose the reproduction of men in high status position in the Qing Dynasty into parts due to occupational inheritance and net fertility. The total reproductive effect of a man having a high status position is 1.107 high status sons of which .763 is due to immobility and .344 is due to fertility. The total reproductive effect of having four or more ancestral emperors is .391 high class sons of which .276 is due to immobility and .115 is due to fertility. In general, these results show that differential fertility amplifies the effects of occupational inheritance, whereas occupational inheritance dampens the impact of differential fertility. (The full paper will include the details of this decomposition, which are omitted here because of space limitations.)

References

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Table 1. Effects of Father, Grandfather, and Ancestral Emperors on Social Position

Effects of Fathers, Grandfathers, and Ancestral Emperors on Position

	β	z(β)	β	z(β)	β	z(β)
			No Ancestral Emperor Effects			
Father Position	1.431	39	1.309	34	1.287	33
Grandfather Position			0.410	11	0.370	9
Gr-Grandfather Position					0.247	6
			Ancestral Emperor Effects			
Father Position	1.350	35	1.232	31	1.209	30
Grandfather Position			0.430	11	0.379	9
Gr-Grandfather Position					0.276	7
1 Ancestral Emperor (vs. 0)	0.062	1	0.054	1	0.024	0
2 Ancestral Emperors (vs. 0)	0.067	1	0.043	1	-0.007	0
3 Ancestral Emperors (vs. 0)	0.367	4	0.341	4	0.293	3
4+ Ancestral Emperors (vs. 0)	0.776	12	0.710	11	0.630	10

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Table 2. Effects of Father, Grandfather, and Ancestral Emperors on Number of Surviving Adult Sons

Effects of Position on Number of Surviving Adult Sons

	β	z(β)	β	z(β)	β	z(β)
			No Ancestral Emperor Effects			
Position	0.606	34	0.583	31	0.577	31
Father Position			0.067	4	0.055	3
Grandfather Position					0.049	3
			Ancestral Emperor Effects			
Position	0.514	30	0.514	29	0.511	28
Father Position			0.002	0	-0.002	0
Grandfather Position					0.017	1
1 Ancestral Emperor (vs. 0)	0.056	3	0.056	3	0.060	3
2 Ancestral Emperors (vs. 0)	0.218	12	0.217	12	0.220	12
3 Ancestral Emperors (vs. 0)	0.207	6	0.206	6	0.209	6
4+ Ancestral Emperors (vs. 0)	0.264	9	0.261	9	0.262	9

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