

## Comment: Intergenerational Wealth Transmission and Inequality in Premodern Societies

# Inheritance and Inequality of Wealth

## A Comment

**Frederic L. Pryor**

Department of Economics, Swarthmore College, Swarthmore,  
Pennsylvania 19081, U.S.A. (fpryor1@swarthmore.edu). 23 IX 09

The essays under review provide a model analysis of a sadly neglected topic, the distribution of wealth and inheritance in nonstate societies. They define three different types of wealth, measure the inequalities of holdings and inheritance arrangements within four groups of societies with the same economic systems, and then analyze similarities and differences between the four groups. This research procedure allows us to gain a broad perspective on the topic. The statistical methods employed are sophisticated, and the exposition of the results is clear. Nevertheless, I am uncomfortable with the interpretation of the statistical results, and the comments below present a different perspective on these calculations.

### The Relationship between Gini Coefficients of Wealth and Inheritance $\beta$ 's

The  $\beta$  coefficient represents the percentage change of an offspring's wealth associated with a 1% change in the wealth of his or her parents. As noted in the introductory essay by Bowles, Smith, and Borgerhoff Mulder (2010),  $(1 - \beta)$  represents a regression toward the mean; that is, in the very long run, with other things remaining equal, wealth will be equally distributed if  $\beta$  is less than unity, which is the case for every society in the sample. The lower the  $\beta$  is, the faster this equality will be achieved. Other things equal, we have reason to suspect, therefore, that lower  $\beta$ 's will be associated with lower Gini coefficients of wealth, a conjecture that can be easily tested with the data for the 44 societies.

Unfortunately, the results of a regression analysis do not support this conjecture. More specifically, if we examine the relationship between the Gini coefficients (dependent variable) and  $\beta$ 's (independent variable) with an ordinary least

squares regression, we find a negative but statistically insignificant relationship (.05 level) for the foraging (hunting and gathering) and horticultural societies, a positive but statistically insignificant relationship for the pastoral societies, and a positive and statistically significant relationship only for the agricultural societies. These results are not changed if we add the relative importance of the different types of food production activities (the  $\alpha$ 's) or a dummy variable indicating whether the calculated  $\beta$  is statistically significant. If we arrange the data according to the type of wealth (embodied, material, or relational) and rerun the regressions, we find a negative but statistically insignificant relationship between the Gini coefficients and the  $\beta$ 's for embodied and relational wealth and a positive but statistically insignificant relationship for material wealth. Adding to the regression, the  $\alpha$ 's or a dummy variable indicating whether the calculated  $\beta$  is statistically significant also does not change the statistical insignificance of the results. So what is happening?

### Explanations of the Disappointing Regression Results

Two easy explanations for the disappointing regression results can be offered. (1) Several of the papers mentioned differential shocks to individual wealth holdings—cattle are stolen or die from disease, climate changes nullify certain types of embodied wealth, or people die so that relational wealth evaporates. But, as conceded in the papers, no empirical evidence is available to determine whether such shocks actually had any impact on the Gini coefficients of wealth holdings. (2) The  $\beta$  coefficients are not a good measure of inheritance practices and, moreover, cannot be accurately calculated: slightly more than half are not statistically significant at the .05 level. If wealth is not equally inherited by a person's children or if parents with the same wealth have a different number of children, then the ratios of a child's wealth to that of his or

her parents can be greatly different for parents with the same wealth, and an average ratio or a ratio calculated through a regression technique may not tell us very much if we consider only a few families. More specifically, in a society where each set of parents has only two children and each child inherits an equal share of the family's wealth, the  $\beta$  may equal 1, while in the same family situation with primogeniture, the average  $\beta$  may equal 0.5 because one child inherits nothing. With different numbers of children per family, there may be a wide variation in the ratios of wealth of children to that of parents, and the meaningfulness of the  $\beta$  is open to doubt, especially in small samples. In the regression experiments described above, I included a dummy variable to see whether the lack of statistical significance of the  $\beta$  had any effect on the major results, but it did not. Such a test, however, does not adequately measure the bias of the wide variations of the ratios of children's wealth to parent's wealth for parents in a given wealth class. The inheritance rule, not the calculated  $\beta$ , is the key variable to examine.

## Inheritance and Wealth Inequality: Alternative Explanations

What are the major mechanisms linking the inequalities of wealth and the calculated  $\beta$ 's? Three seem to be particularly important and, in the various papers, are informally discussed but not seriously analyzed.

1. One crucial mechanism is demographic. In this regard, consider the following situation: a society starts with an initial distribution of wealth among individuals, the adults marry according to certain rules (e.g., the degree of assortative marriage according to wealth), people earn income by labor and the use of their wealth according to certain rules (e.g., labor income varies according to some rule, the income received from wealth varies according to another rule, or there is a certain sharing or redistribution of income in the society), people save according to some rule, they have children according to their income (if they are wealthy, they have more—or fewer—children), they die and their wealth is redistributed according to certain rules (e.g., primogeniture, equal division, or some children receive more than others), and then the process then begins anew as the children marry. Although this process cannot be easily modeled analytically, it can be easily simulated by computer and run for many generations. The simulation results show that the distribution of wealth asymptotically approaches an equilibrium that depends on the various societal rules specified in the model, which also influence the speed at which this equilibrium is achieved (simulations discussed in Pryor 1973). In such a situation, the long-term inequality of wealth may have little relationship to the inequality of wealth in the first few periods of the process.

Unfortunately, the papers in the special section focus only

on the short term because the available data deal primarily with only two adjacent generations and they did not discuss changes in inheritance arrangements or wealth inequalities in the past. The  $\beta$  coefficient in the model is indirectly specified by the inheritance rule and its interaction with the other rules. Such a model provides a direct mechanism linking inheritance rules and wealth inequality, which the various papers in the special section discuss only in an informal manner.

2. The wealth distribution is also influenced by non-demographic societal rules and institutions. In those societies with slavery, wealth may be quite unequally distributed because a certain segment of the society is not allowed to have any (material) wealth. Inequalities may arise because of limited access to certain resources necessary for food production, for example, fertile land for agriculture or foraging rights for particular tracts of land, river bank rights for fishing, water rights and pastures for cattle herding, and so forth. Several of the papers discussed these influential societal rules in passing.

3. Finally, societies differ in the degree to which food and tools for food production are shared between family members, friends, or others, and this also has an important impact on the distribution of wealth. Clearly, a family in a society with extensive sharing is less likely to experience a downward spiral of income and wealth if misfortune strikes, and this suggests that societies with more sharing should have more egalitarian wealth distributions. This conjecture can be tested in several ways.

Some cross-cultural data from a large sample show that both reciprocal exchange and gift giving (one-way transfers), which represent a type of relational wealth, are more likely to be found in foraging and horticultural societies than in pastoral and agricultural societies at higher levels of economic development (Pryor 1977, chaps. 7, 9). We would predict, therefore, that the differences in the Gini coefficients of different types of wealth would be lower (more equal wealth distribution) in the former than in the latter societies. Looking at the Gini coefficients for the various types of capital for foraging and horticultural societies in comparison with those for pastoral and agricultural societies, I find that such a hypothesis is confirmed to a statistically significant degree. Confining ourselves to the individual types of capital, we see that the hypothesis is significantly confirmed for relational wealth but not for embodied or material wealth.

## Final Words

Despite my reservations, I believe that the comparative approach employed in these papers represents an important step forward. Moreover, their focus on inheritance represents research on a topic that has, up to now, been shamefully neglected in the literature on economic anthropology. I can only

hope that the leads provided in these papers serve to encourage others to follow in their footsteps.

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