Intergenerational Wealth Transmission and Inequality in Premodern Societies

The Emergence and Persistence of Inequality in Premodern Societies

Introduction to the Special Section

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CA+ Online-Only Supplement: Estimating the Inheritance of Wealth in Premodern Societies

In this special section we propose an interpretation of the emergence and persistence of wealth inequality in premodern populations along with ethnographic and quantitative evidence exploring this hypothesis. The long-term trajectory of inequality in premodern societies, we suggest, is based on the differing importance of three classes of wealth—material, embodied, and relational—together with differences in the transmission of these types of wealth across generations. Subsequent essays in this forum use data on individual and household wealth from 21 populations to evaluate this and related propositions concerning the interaction of wealth class, transmission rates, production systems (foraging, horticultural, pastoral, and agricultural), and inequality. Here we motivate our interpretation by applying our ideas to the Holocene transition from more egalitarian to more stratified societies, introduce key concepts that are developed in the subsequent essays, and comment on some of the limitations of our study.

Given that sustained economic inequalities generally leave archaeological signatures, their absence (in the form of funerary assemblages, storage facilities, dwellings, ceremonial objects, and nutritional indicators) suggests that prior to about 24,000 years ago (and possibly much more recently), most humans lived in foraging bands with little economic differentiation among families (Formicola 2007; Pettitt and Bader 2000; Vanhaeren and d'Errico 2005). Excepting groups occupying especially rich fishing and hunting sites, substantial levels of economic inequality became characteristic of many (but far from all) populations only after the domestication of plants and animals, eventually culminating in the emergence of class societies and the hierarchical ancient states. We here offer a unified explanation both of the emergence of highly unequal societies and of the continuum found in the ethnographic and historical record from egalitarian foragers to economically stratified pastoral and agricultural societies.

The key to understanding both the Holocene transition and the inequality continuum among contemporary small-scale societies, we propose, is the degree to which wealth is transmitted across generations, for this will determine the extent to which differences in wealth among families may cumulate over time. An example illustrates what is distinctive about our explanation. The Keatley Creek fishers of British Columbia (Hayden 1997), a sedentary prehistoric population, demonstrate the key role of intergenerational inheritance in sustaining inequality. Archaeological studies reveal dietary and other differences between the residents of distinct longhouses that are traceable to the control by the rich over access to choice fishing sites and the transmission of this privilege across generations.

Our explanation of the dynamics of inequality formalizes the contrast between Keatley Creek with its inherited fishing

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sites and extraordinary inequalities and the more common egalitarian social structure of foraging groups, in which (as we will see) wealth is less readily transmitted. This contrast when fully developed suggests a more general way of thinking about variation in equality in the very long run and across different types of human societies.

Limitations of the available archaeological sources have led us to rely on contemporary or historical data. Prehistoric wealth inequality and its transmission across generations is evident in opulent burials of children and other mortuary practices (Formicola 2007; Pettitt and Bader 2000; Vanhaeren and d'Errico 2005), the nature and distribution of ceremonial goods (Hayden 2001), the size and location of dwellings and storage facilities (Soffer 1989), and measures of stature and health (Cohen and Armelagos 1984). Although the archaeological evidence indicates the presence of prehistoric inequality, it does not allow precise estimates of its degree or the extent of its intergenerational transmission that would permit comparison across differing production systems and historical epochs. Fortunately, current and recent data, when analyzed with appropriate models, can assist in the reconstruction of the past. Examples include the use of contemporary linguistic and genetic evidence to infer ancient patterns of migration (Seielstad, Minch, and Cavalli-Sforza 1998; Wilkins 2006), economic transitions (Ammerman and Cavalli-Sforza 1984), and social structure (Kirch 1984; Nettle 1996).

Other explanations of the Holocene emergence of inequality have attributed a central role to climate change (Boyd et al. 2001), to food storage (Kuijt 2008; Testart 1982), to elite control of circumscribed resources such that the costs of desertion are high (Boone 1992), or to the promotion of luxury consumption and ceremonial display (Hayden 2001). Still other explanations stress population pressure (Cohen 1977; Dow and Reed 2009; Kennett et al. 2008; Shennan 2008), warfare (Rowthorn and Seabright 2008; Spencer 2002; Webster 1975), or developments that permit a more complex division of labor (Henrich and Boyd 2008; Smith and Choi 2007), and others attribute a decisive role to ideological and cultural factors such as a growing concentration of control over ritual (Trigger 2003). Related and additional interpretations have been proposed for the rise of states (Wright 1978), and further explanations are surveyed in Ames (2007) and Johnson and Earle (2000).

Economic and social inequality is generally measured by the extent of enduring differences among people or families in access to valued goods, services, or status. It is conventional to distinguish between achieved differences that may result from differential skill, effort, or other individual attributes, on the one hand, and ascribed differences due to distinctions of ethnic group membership, race, or social origins on the other. Understood as persistent ascribed differences in access to economic resources and other valued ends, inequality is exemplified by the transmission of economic and social advantage within families across generations. As the basis of hereditary elites and of caste and other persistent systems of social stratification, the intergenerational transmission of wealth has figured prominently over the centuries in theories of inequality and social change. Similarly, wealth transmission is central to debates on equality of opportunity, distributive justice, and poverty alleviation.

The intergenerational transmission of education, occupational prestige, physical capital, and other forms of human and material wealth has been extensively studied by economists and sociologists, and its quantitative extent has been estimated in comparative studies in a limited number of modern economies (Björklund and Jäntti 2009; Bowles and Gintis 2002; Corak 2004; Hertz et al. 2007). But for premodern societies, individual-based empirical estimates of the extent of intergenerational transmission are almost nonexistent, despite a long history of ethnographic interest in the more formal rules of inheritance (Goody 1976) and valuable comparative contributions based on ethnographers' subjective assessments (Pryor 1977, 2005).

To remedy this situation, we must address a set of challenges. The first is to identify the distinctive kinds of wealth that are central to the livelihoods of foragers, horticulturalists, and premodern agriculturalists and herders, which include little-studied aspects of wealth such as the skills involved in subsistence production, social connections such as exist in food sharing or coalitional networks, as well as land, livestock, and material possessions and the more commonly studied aspects of somatic wealth (such as body weight). The second challenge is to devise measures of the intergenerational transmission of wealth that are applicable across different kinds of wealth and across different populations, including those with radically different social and demographic structures, including foragers, horticulturalists, herders, and farmers. The fact that the necessary information is not available in standard survey data sets is another heretofore decisive impediment to such comparative studies.

While the degree of intergenerational wealth transmission within families and the degree of wealth inequality among families in a given generation are entirely independent measures, the two are causally linked. As long as wealth is transmitted across generations, any sources of different wealth holdings in a given generation—bountiful harvest or hunt, an incapacitating accident, or theft of one's stock—will contribute to the inequality in the next and subsequent generations. We have explored elsewhere (Borgerhoff Mulder et al. 2009) the interaction between chance shocks to one's wealth and its transmission across generations. This interaction implies a wealth dynamic that may give a stationary (long-run equilibrium) level of wealth inequality. This steady state balances, on the one hand, the tendency of wealth inequality to dissipate over time due to regression to the mean in intergenerational wealth transmission (meaning that the offspring of the rich are closer to the mean than their parents were, and similarly for the offspring of the poor) with, on the other, the offsetting injection of new inequalities in each generation due to shocks.

In this and the following five essays, we and our colleagues report the results of a study of these multiple dimensions of wealth, based on new data from 21 hunter-gatherer, horticultural, pastoral, and agricultural populations. Our studies examine both the distribution of wealth among individuals (or households) and its transmission across generations. We present estimates of dispersion and intergenerational transmission for 43 different types of wealth, and we use these to discuss the dynamics of inequality across different production systems. See also the CA+ online supplement "Estimating the Inheritance of Wealth in Premodern Societies" in the online edition of *Current Anthropology*.

The Nature of Wealth and Its Intergenerational Transmission

We use a broad definition of "wealth" similar to Kaplan's (1996) concept of embodied and extrasomatic capital and to economists' measure of physical and human capital (Schultz 1961), namely, an attribute of the individual that contributes to a flow of valued goods or services. We do this because we want to examine a wide range of causes of inequality among individuals that may be transmitted across generations, whether these inequalities are associated with differences in livestock, land, tools, skills, knowledge, reproductive success, body weight, trading partners, social networks, or other individual attributes. In this respect we converge with the work of social scientists engaged with poverty alleviation who emphasize the nonincome dimensions to poverty such as longevity, literacy, and health, given that the poor generally live shorter and less healthy lives and enjoy less education than the rich (Kanbur 2001). It also converges with that of evolutionary anthropologists, who have made the intergenerational transfer of a whole range of wealth types central to their models of human demographic patterns (Kaplan 1996; Kaplan and Lancaster 2003; Lee 2003; Luttbeg, Borgerhoff Mulder, and Mangel 2000; Mace 2000).

We group these disparate kinds of wealth into three generic categories—material, relational, and embodied. Material wealth consists of real estate, livestock, household goods, farm equipment, and other material items that store wealth, such as jewelry; in this study our primary measures are land, livestock, and household effects. Relational wealth refers primarily to an individual's position in social networks, specifically, the number and status of individuals to whom he or she is linked. Anthropologists have long recognized the importance of such relationships (Mauss 1967). Here we measure relational wealth by number of partners with whom an individual shares food, labor, or livestock; unfortunately, we have no measures of ritual power, an important element of relational wealth and key to institutionalizing inequality in some populations (e.g., Keen 2006). Embodied wealth includes strength, immune function, coordination, skill, and knowledge. Here our measures include body weight, grip strength, practical skills, and knowledge measured by indices such as foraging returns or farming skills and (in predemographic transition populations) reproductive success. We recognize that reproductive success (as a measure of Darwinian fitness) is commonly viewed as a consequence rather than a measure of wealth (e.g., Nettle and Pollet 2008). Here, however, we use reproductive success as a summary indicator of somatic wealth, capturing an individual's ability to produce and successfully raise offspring.

Material, relational, and embodied wealth take different forms in each population. For example, material wealth among East African pastoralists (livestock) is quite different from that of English farmers in the seventeenth and eighteenth centuries (an estate) or the household utensils and tools of a South American horticulturalist. Similarly, the food-sharing networks of whalers in Indonesia are very different from *hxaro* exchange partners among the Botswanan Ju/'hoansi. Nevertheless it is generally straightforward to classify these and other forms of wealth as embodied, material, or relational.

We have collected individual- or family-level data on as many types of wealth as possible that fall into these three classes. The resulting wealth measures for parent-offspring pairs reveal the similarity of wealth levels across generations, allowing us to estimate the degree of intergenerational transmission of wealth. The same data (not restricted to intergenerational pairs) also allow an estimate of the degree of inequality among households and individuals with respect to different kinds of wealth.

Transmission of material resources between generations is a defining feature of humans. It occurs in some nonhuman species, typically, cooperative breeders such as acorn woodpeckers, where 24% of males inherit their parents' territory along with its granary of acorns (Koenig et al. 2000). But species where the young stay in their natal area and benefit from such bequests are unusual, and the extent of bequests is limited compared to those that occur among humans, where offspring generally acquire a great deal more from parents than their genetic material. Anthropologists most commonly refer to intergenerational transmission as "inheritance," examining normative conventions regarding the transmission of material resources, property rights, political office, and more abstract aspects of status (such as caste). For example, they attribute some aspects of cultural diversity to the extent of durable resources that may be transmitted to the next generation (Diehl 2000; Gaulin and Schlegel 1980; Kelly 1993; Price 1995). And where there are such resources to transmit, they have examined how the transmission of material resources, political offices, and other kinds of status is patterned by sex (matrilineal or patrilineal; e.g., Aberle 1961) or sex and linearity (Burton et al. 1996; Collier 1988; Earle 1997; Jones 2003). Anthropologists have also sought to link the existence of heritable property to different kinds of kinship systems (Aberle 1961; Carneiro 1970; Gibson 2008; Gray and Gulliver 1964).

Humans are also unusual in the extent to which embodied wealth in the form of knowledge and skill are transmitted,

and indeed it is this extended dependence of offspring on their parents during which offspring learn to forage for hard-to-acquire foods that many now argue creates the selective conditions that shaped our unique life histories (Kaplan, Hooper, and Gurven 2009). Studies of some other animals show considerable inheritance of dominance rank (Cowlishaw and Dunbar 1991; Engh et al. 2000; Pusey and Packer 1997; Silk, Altman, and Alberts 2006), and for some (e.g., female spotted hyenas; Hofer and East 2003), the transmission process depends critically on the presence of the parent. Humans are thus not unique in the intergenerational transfer of nonmaterial resources. But the unusually long period of dependence on parental support is testimony to the extent that learning from parents and others in the previous generation is essential to human livelihoods.

Transmission-Enhancing Mechanisms

Our measure of wealth transmission across generations is the statistical association between offspring's and parent's wealth (technical details for the model and estimation in this and subsequent essays are in the CA+ online supplement and in Borgerhoff Mulder et al. 2009). We adopt the convenient unit-free convention of measuring this association as an elasticity, namely, the percent difference in offspring wealth associated with a percent difference in parental wealth, which we refer to as β. (Francis Galton's [1889] "regression to the mean" is $1 - \beta$.) Though we describe a process of "transmission," β need not represent a literal passing on from parent to child of such things as tracts of land or herds of stock. Its extent is the result of these bequest-like processes and any other mechanism that links differences in parental wealth to differences in offspring wealth.

In addition to bequests and other direct transfers, the most important of these mechanisms affecting β are assortment in marital, productive, or other resource-sharing activities; the manner in which wealth is invested, developed, consumed, or otherwise used; and the extent to which others may be excluded from the benefits of wealth acquired from parents. Positive assortment contributes to intergenerational transmission because when wealthy individuals share sources of wealth (whether material, cultural, or genetic) with similarly wealthy mates or partners in economic pursuits, regression to the mean $(1 - \beta)$ is limited. The importance of the next mechanism derives from the fact that wealth difference that may be due to differences in transfers or assortment may either grow or diminish over time. In the former case, the result is to enhance the level of association between parental and offspring wealth. This is likely to occur when there is cumulative advantage associated with the use of wealth, as may arise in the case of material wealth if there are economies of scale (e.g., in irrigated agriculture or herding). In these cases, somewhat larger holdings in one generation may result in significantly larger holdings in the next, partially overcoming the pressures for regression to the mean arising from less than perfect assortment and the dissipation of resources among multiple offspring or others in the bequest process. Cumulative advantage may also arise for some kinds of politically deployed network wealth, where the influence one may exert increases more than proportionally with the number of ones' allies.

Finally, there is the extent to which the form of wealth acquired from one's parents allows the offspring to exclude others from its use. An example is knowledge (how to make a tool or where to find honey) that is typically directly transmissible but cannot readily be monopolized by offspring (except for some kinds of culturally protected ritual knowledge). Thus, differences in the degree of transmission (β) associated with different classes of wealth arise because material, embodied, and relational weath differ in the extent to which direct transmission is possible, whether aspects of the wealth class favor assortment, the extent of cumulative advantage, or the extent to which others can be excluded.

Data and analysis in the essays that follow show that the extent of actual transmission is not determined solely by the characteristics of the wealth type and will differ across production systems in response to differences in the cultural norms and political practices of a group and other influences not directly linked to the type of wealth. But the above analysis does suggest that material wealth, because it is directly transmissible, is subject to both positive assortment and cumulative advantage, and is excludable, may be more highly transmitted than either embodied or relational wealth. Our summary of the relevant influences appears in table 1.

Measuring Wealth Transmission, Importance, and Inequality

We seek to estimate β (the percent difference in offspring wealth associated with a percent difference in parental wealth) based on the statistical association of wealth levels for parents and offspring at the same age or at death. For example, for East Anglian farmers in the sixteenth to eighteenth century, our estimate is based on estates at death of the two generations, while our β's for the intergenerational transmission of reproductive success are statistically age corrected to estimate completed reproduction. To provide a more intuitive answer to the question of how much intergenerational inequality a given value of β indicates, we can use the estimate of β to indicate the probability that an offspring whose parent is in

Table 1. Factors enhancing the transmission of three classes of wealth

	Material	Embodied	Relational
Direct transmission	Yes	Limited	Limited
Cumulative advantage	Yes	No	In some cases
Positive assortment	Yes	Yes	Limited
Excludable	Yes	In some cases	No

the top decile (or quintile) of the distribution of wealth will also end up in the top decile (or quintile), to the probability that the offspring of a parent in the bottom decile will end up in the top decile (or quintile). For example, $\beta = 0.2$ implies that the offspring from the top decile in distribution of wealth in the parental generation has 3.6 times the likelihood of being in the top decile of his or her generation as the son or daughter of the bottom decile (for details, see the CA+ online supplement). Thus, what may appear to be "small" intergenerational elasticities imply quite substantial differences in life chances. Doubling the β (to 0.4) more than quadruples the ratio of the above conditional probabilities (to 16.2).

In order to estimate the overall degree of wealth inheritance characteristic of a particular population, we need to average the various kinds of wealth essential to their livelihoods. Because the importance of each wealth type will of course differ across production systems, we use a weighted average, the weights (termed α) measuring the relative importance of a given wealth class for the particular population in question. To determine the importance of a wealth category within a particular production system, we used ethnographers' judgments (for each wealth class in the population they studied) of the percentage difference in household well-being associated with a 1% difference in amount of a given wealth class, holding other wealth classes constant at the average for that population and requiring these percentage effects to sum to 1. We then used these weights to calculate an "importance-weighted" or "α-weighted" average β for the population (details and alternative direct estimates are in the CA+ online supplement).

To determine inequalities in our measures of wealth, we calculated a Lorenz curve-based Gini coefficient on age-adjusted data; a Gini coefficient approaches 1 if in a large population a single person owns all the wealth, whereas a Gini of 0 implies complete equality. (For example, Gini coefficients for grave wealth for some of the Northwest Plateau fishers are in the neighborhood of 0.7, indicating an extraordinary level of economic inequality [Schulting 1995] possibly on a par with modern Brazil or South Africa.)

The Sample of Societies

Table 2 describes the populations studied. As can be seen, these are distributed across all continents, but unevenly (e.g., Africa is overrepresented, the Americas the opposite). Due to the nature of the individual-level data required to estimate β, we utilized primarily ethnographic rather than archaeological data sets; we include three premodern European populations studied through archival material. The paucity of samples, compared, for example, to the Standard Cross-Cultural Sample ($n = 186$), reflects the fact that despite growth in quantitative ethnographic research, there are still few data sets that allow for the reliable estimation of intergenerationally transmitted wealth. This is hardly surprising, given the fact that the fieldwork on which most studies are based is typically short-lived—the length of a PhD, with perhaps a few return visits to a site. Tracing families and households over time is challenging, requiring painstakingly cautious ethnography and sophisticated use of databases. Our strategy is to focus on studies that provide rigorously collected social, economic, and demographic data so as to generate reliable estimates of the distribution and transmission of different wealth types. This yields a sample of 21 populations, one of the largest comparative anthropological studies of small-scale societies based on individual-level data.

Production Systems

As in the case of our three wealth classes, the boundaries demarcating the four production systems that we study—hunter-gatherer, horticultural, pastoral, and agricultural—are a matter of judgment. We employ these conventional categories because past research (reviewed in Johnson and Earle 2000) has suggested that these are strongly associated with different levels of equality and inequality, and we wish to explore what role intergenerational transmission and the importance of different categories of wealth might play in this. We refer to this definitional framework as production systems rather than subsistence systems, even though the latter term is used more conventionally in anthropological and archaeological work, because although each of our societies does produce food for subsistence, they all are (and probably have been for a long time) integrated into local, even regional, markets.

Accordingly, we define hunter-gatherer production systems as those that make no (or minimal) use of domesticated species (either plant or animal), whereas pastoralists rely primarily on the livestock that they raise for subsistence and sometimes commercial purposes. Pastoralists may farm, but the extent of land that is cultivated is constrained not by ownership rights but, rather, by labor availability. Horticulturalists are variously distinguished from agriculturalists in the use of plows and traction animals by the latter, in whether the system is labor or land limited, in commercial orientation, or in the alienability of land. A strict technologically based definition of production systems would focus on the use of plows and traction animals versus hoes. In practice, the systems analyzed here differ in terms of technology as well as in terms of the productivity, scarcity, and alienability of land. Accordingly, horticulturalists cultivate land that is plentifully available with hoes, and agriculturalists cultivate family-owned farms with animal-drawn plows. As subsidiary activities, horticulturalists often fish, hunt and gather, and keep livestock, whereas agriculturalists most commonly supplement their production of crops with livestock rearing. We recognize that distinctions between these production systems are necessarily somewhat arbitrary, and we stress that production systems are in no sense viewed as evolutionarily sequenced stages. They are, however, very useful for defining

Table 2. Sample background

Production system and population	Location and date	Categories of wealth studied	Researcher (key publication)	General description	Type of inheritance for property and positions
Hunter-gatherer:					
Ache	Paraguay (1982–2008)	Weight; hunting returns	Hill (Hill and Hurtado 1996)	Mobile foragers	No formal inheritance of property beyond gifting; foraging territories show weak patrilineal bias; godparental relationships influence status acquisition
Hadza	Tanzania (1982–2008)	Weight; grip strength; hunting skill; digging skill	Marlowe (Marlowe 2010)	Mobile foragers	No formal rules; various kinfolk take miscellaneous items of material property
Ju/'hoansi	Botswana (1973–1975)	Exchange partners	Wiessner (Wiessner 1982)	Mobile foragers	Exchange partners and land rights inherited from both mother and father
Lamalera	Indonesia (2006)	Quality of housing; boat shares; food share partners; reproductive success	Nolin (Alvard and Nolin 2002)	Sedentary fishers, trade with farmers	Patrilineal inheritance of most property; important positions nominally inherited by sons but in practice may be achieved by others
Meriam	Australia (1998)	Reproductive success	Smith (Smith, Bliege Bird, and Bird 2003)	Sedentary fishers with farming	Patrilineal inheritance of land at individual and patriclan level, with some inheritance by daughters; positions generally achieved rather than ascribed
Horticultural:					
Dominicans	Dominica (2000–2008)	Land	Quinlan (Quinlan 2006)	Farmers	Patrilineal inheritance of usufruct of family land; buildings and trees transferred with weak kin bias
Gambians	Gambia (1950–1980)	Weight; reproductive success	Sear (Sear et al. 2002)	Farmers	Primarily patrilineal, with some mother-daughter inheritance of land
Pimbwe	Tanzania (1995–2008)	House/farm utensils; farming skill; weight; reproductive success	Borgerhoff Mulder (Borgerhoff Mulder 2009)	Farmers with some fishing	No formal rules, but possessions usually inherited by same-sex children; matrilineally inherited ritual chiefly positions
Tsimane	Bolivia (2002–2008)	Household utensils; labor cooperation; allies in conflict; knowledge/skill; grip strength; weight; hunting returns; reproductive success	Gurven (Gurven, Kaplan, and Zelada Supa 2007	Farmers with fishing and foraging	No formal rules, but possessions usually inherited by same-sex children; status positions are mostly achieved

Pastoralist:					
Datoga	Tanzania (1987–1989)	Livestock; reproductive success	Borgerhoff Mulder (Borgerhoff Mulder 1992)	Transhumant pastoralists, with some farming	Patrilineal inheritance of livestock, slight advantages to first and last sons
Juhaina Arabs	Chad (2003)	Camels	Fazzio (Fazzio 2008)	Transhumant pastoralists	Patrilineal inheritance of livestock equally among sons
Sangu (Ukwaheri)	Tanzania (1997–2000)	Cattle	McElreath (McElreath 2004)	Pastoralists with some farming	Patrilineal inheritance of livestock equally among sons
Yomut (Charwa)	Turkmenistan/Iran (1965–1974)	Patrimony (livestock)	Irons (Irons 1975)	Transhumant pastoralists, with some farming	Patrilineal inheritance of livestock equally among sons
Agricultural:					
Bengali	India (2000–2001)	Reproductive success	Leonetti (Leonetti et al. 2005)	Farmers with wage labor	Patrilineal inheritance of land
Bengaluru	India (1910–2002)	In-law networks	Shenk (Shenk 2005)	Farmers, merchants, wage labor, urban	Patrilineal inheritance of property equally among sons; daughters given dowries at marriage
East Anglians	England (1540–1845)	Estate value (land); reproductive success	Clark (Clark 2007)	Farmers, with wage labor and merchants	Sons inherit at least two-thirds of father's property, with slight bias toward primogeniture
Khasi	India (2000–2001)	Reproductive success	Leonetti (Leonetti et al. 2005)	Farmers with wage labor	Daughters inherit land from mother; youngest daughter inherits mother's house
Kipsigis	Kenya (1981–1990)	Land; livestock; cattle partners; reproductive success	Borgerhoff Mulder (Borgerhoff Mulder 1995)	Farmers with livestock	Patrilineal for land and livestock equally among sons
Krummhörn	Germany (18th–19th centuries)	Land	Beise (Voland 1990)	Farmers	Ultimogeniture; noninheriting siblings are compensated, daughter's share half of a son's
Skellefteå	Sweden (1800–1888)	Reproductive success	Low (Low and Clarke 1990)	Farmers	Prior to mandate for equality in 1840s, land inheritance primarily to sons
Yomut (Chomur)	Turkmenistan/Iran (1965–1974)	Patrimony (land)	Irons (Irons 1975)	Farmers with livestock	Patrilineal inheritance of land equally among sons

the broad contours of how the intergenerational transmission of their principle wealth types might be correlated with levels of inequality.

Discussion

The distinctive feature of our approach is its use of individual- or family-level continuous measures of a heterogeneous set of wealth types to assess the extent to which differences among families in such valued ends as access to resources and social ties are perpetuated over time. The fact that our measure of transmission is unit-free facilitates quantitative comparisons across wealth types and production systems. The approach may be contrasted with heretofore available comparative studies that have relied not on individual-level data but on an ethnographers' qualitative assessment of the extent of intergenerational inheritance or the degree of wealth inequality in the population as a whole, often converted to an ordinal five-point scale. The qualitative and ordinal nature of these data effectively preclude systematic comparisons across wealth types and production systems. As we will see in the essays that follow, our conclusions do not entirely support the impressions gained from the ethnographic literature.

Using individual data on continuous measures of wealth comes with a price, however. The underlying model is about the dynamics of inequality based on a continuum of wealth in which some have more and others less. It does not represent a class-divided population in which the control over material wealth—land or cattle, for example—differentiates an owning class from those without material wealth—the landless, for example, whose only wealth is embodied and relational and whose livelihood depends on access to material wealth under the control of others. Yet such class distinctions are present, even in some hunting and gathering systems (Ames 2008; Arnold 1993; Hayden 2001; Kennett et al. 2008).

Related to this shortcoming is the fact that we do not consider group inequality such as may exist not only among classes but also between men and women, the young and the old, among castes, and in societies with a history of subordination of subpopulations. Partly for this reason we also cannot study class-based and other forms of collective action and their effects on intergenerational transmission and inequality of wealth. While in the societies under investigation these do not take the familiar forms of strikes, lockouts, and the other commonplace conflicts of industrial economies, collective action in conflicts over wealth nonetheless affects the distribution of wealth and its intergenerational transmission in premodern populations. Examples are the coordinated shunning, threats of ostracism, and other constraints deliberately imposed on would-be aggrandizers in many hunter-gatherer populations (Boehm 2000). Lavish funeral feasting expected to be provided by wealthy families of the deceased is another collective practice that effectively limits direct transmission of material wealth to offspring (Hayden 2009; Parker Pearson 1999).

Due to the limited nature of the available data, our sample of populations is not (in technical terms) representative and for that reason may be biased. Furthermore, within populations, the data sets available for examining parent-offspring associations sometimes lack adequate information about individuals (offspring who have migrated, e.g.). We considered several data sets that, in the end, could not be analyzed with the set of methods we required for comparability.

The next four essays address the intergenerational transmission of wealth and wealth inequality in, respectively, hunter-gatherer, horticultural, pastoral, and agricultural populations, each essay beginning with an introduction to general features of the production system. Each then examines the study populations and field sites and the extent to which these are representative of the production system, as well as methods used for collecting wealth data in each population. Each essay presents the estimates of the relative importance of material, embodied, and relational wealth for success or well-being in that particular production system (α), and then the estimates of the extent of intergenerational transmission (β) and possible transmission mechanisms for each wealth type. A brief concluding essay synthesizes the empirical results, evaluating the linkages between production systems, intergenerational transmission of the most important kinds of wealth, and the levels of inequality.

We hope this effort will encourage others to expand the range of premodern societies for which rigorous analysis of intergenerational wealth transmission is possible and to develop quantitative models more able to capture the full complexity of the process of intergenerational transmission of wealth and the dynamics of inequality.

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