

5 The Birth of Hierarchy

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Archaeologists and anthropologists are now in broad agreement that forager societies were substantially more egalitarian than virtually all the societies that succeeded them after the widespread adoption of agriculture. It is no longer tenable to claim that this is because the naturally egalitarian instincts of humankind have been corrupted by modern society. Christopher Boehm (1999), who surveys the evidence for the egalitarian nature of forager societies, argues that in fact their members seem to have been at least as status-conscious and competitive as their modern descendants. However, human beings also share both a taste and a talent for collaborating to restrain the behavior of individuals who press their competitive instincts too far, who claim too large a share of the benefits of social life. What made forager societies different from those that succeeded them was that “coalitions of losers” were able to keep the self-aggrandizement of winners very substantially in check. The most notable exceptions were complex hunter-gatherer societies like those of the Pacific Northwest, which through control over salmon runs enjoyed some of the benefits of the sedentary life without engaging in cultivation (see Hayden, 1995). Let’s call the more typical forager outcome “the egalitarianism of countervailing power,” to distinguish it from other kinds of egalitarianism, such as the kind Jean-Jacques Rousseau believed had once existed in the absence of the competitive instincts allegedly instilled by modern social living. What were the conditions that made possible the egalitarianism of countervailing power, and why were they undermined by the arrival of agriculture?

It is also widely agreed among scholars that the conditions that made forager egalitarianism possible included the need for cooperation in foraging (especially but not only in hunting) and the infeasibility of coercion in bringing that cooperation about. Hunting and gathering cannot be effectively performed at the point of a spear or while wearing a ball and chain. Agricultural societies, by contrast, can and to a massive extent did put slaves or simply very poor laborers to work tilling fields or building monuments. And the earliest states had substantial organized coercion: in Bruce Trigger’s words, “in all the early civilizations for which we have adequate documentation,

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the privileges of the upper classes were protected by armed forces and the legal system” (Trigger, 2003, p. 265).

It seems reasonably clear why these two sets of technological and social conditions (foraging-plus-low-inequality and agriculture-plus-high-inequality) could each have represented an equilibrium of social behavior. The equilibrium would have been maintained in the former case by rewards for cooperation and social, rather than physically coercive, penalties for ordinary selfish behavior. Interesting questions would remain about why human beings had evolved to be so responsive to social penalties, but it is hard to doubt that they have.

In the latter case, the equilibrium would have been maintained by coercion, with those responsible for enforcing the coercive penalties motivated in turn by fear of coercion. It also seems reasonably clear why high inequality could not have been a characteristic of a forager economy—those at the bottom of the hierarchy would simply not have had enough stake in the outcome to be willing to cooperate. Thus in a forager economy *only* the egalitarianism of countervailing power was a feasible equilibrium.

However, Kim Sterelny argues in his chapter in this volume that it does not follow that we can understand how hierarchy arose, nor *a fortiori* why it became so widespread in such a comparatively short time after the spread of agriculture. Though others have seen the need for specific theories of the transition (see, e.g., Kennett et al., 2009), this is the first time I have seen this argument so clearly and explicitly made. Hierarchy was *one* equilibrium of Holocene life, but this does not make it the only equilibrium. Nothing in the logic of hierarchy rules out the possibility that the egalitarianism of countervailing power remained an alternative equilibrium of Holocene life, because unless established institutions of coercion *already* existed, potential hierarchs might have had no way to impose their will. If in fact the egalitarianism of countervailing power was no longer an equilibrium once agriculture became widespread (and the evidence of the near-universal movement of human societies toward substantially greater hierarchy strongly suggests this), we need to understand what it was about agriculture that made this happen. Appealing to conditions after the establishment of hierarchy (when coercion was readily available to reinforce the position of those who benefited from it) will not tell us why social entrepreneurs could get away with appropriating a far larger share of the rewards of cooperation for themselves before the conditions for coercion of the losers were present. What made such entrepreneurs able to succeed in the Holocene (after agricultural technology but before the institutions of coercion) with initiatives that could never have succeeded in the Pleistocene?

Figures 5.1 and 5.2 illustrate this difficulty. Figure 5.1 shows a relation between the development of agricultural technology and the average degree of inequality in society, according to the model that most historians and anthropologists appear implicitly to



Figure 5.1
A single social equilibrium.

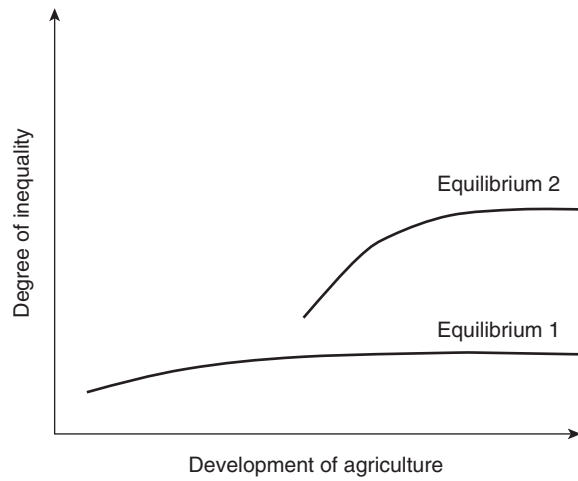


Figure 5.2
Two social equilibria.

have adopted. As agricultural development proceeds it yields the potential for individuals to accumulate somewhat larger surpluses, though social pressure for redistribution initially causes this phenomenon to remain modest in importance. Then a tipping point is reached at which the individuals who benefit most from surpluses can call on the instruments of coercion to protect them against having to redistribute anything, and inequality increases sharply. There may or may not be an eventual slowing of the process as greater agricultural sophistication requires a more educated or actively participative workforce.

Sterelny's objection can be rephrased as the claim that the arguments advanced for the possibility of hierarchy in the Holocene might equally well imply the situation in figure 5.2. Here the equilibrium relation between agricultural development and inequality continues to hold with only modest increases in inequality throughout the Holocene. Another equilibrium exists once a certain level of agricultural development is reached (though not at the lowest levels); what it means to call this an equilibrium is that *if* the institutions of coercion exist then members of society will comply with the hierarchy, and the existence of those institutions of coercion is one of the features of the hierarchy that is in turn assured by their compliance. However, it is not at all clear how a society advancing modestly along the path implied by equilibrium 1 might find itself jumping to equilibrium 2, given that, if it starts in equilibrium 1, the institutions of coercion that would make equilibrium 2 possible do not yet exist. Entrepreneurs who seek to introduce more hierarchical divisions of the surplus would need first to make these acceptable to their uncoerced fellow citizens in order to be able subsequently to pay for the coercion that would make their acceptance redundant. And (by the definition of an equilibrium) that is exactly what they are unable to do, according to the model of the egalitarianism of countervailing power. Indeed, that model has a much harder time explaining the emergence of hierarchy than does egalitarianism in the style of Rousseau, since a population of true altruists would be much easier for a selfish hierarch to invade than a population of savvy foragers continually on the lookout for self-aggrandizers.

The evidence of the near-universal eventual emergence of hierarchy nevertheless suggests that figure 5.1 must be the more accurate description of reality than figure 5.2, even if figure 5.2 corresponds better to the current state of historical explanation. In addition, figure 5.2 implies that when hierarchy emerged it did so in a relatively rapid and discontinuous jump. This is something that Currie et al. (2010) find to be a very implausible model of the evolution of 84 Austronesian-speaking societies, analyzed using phylogenetic methods. They estimate closeness of these societies in time via closeness in certain basic vocabulary terms, estimated probabilistically over a large number of samples of vocabulary terms, and note that societies close in time are also only incrementally different in degree of political complexity. The evidence would not

look like this if, for example, societies had passed from relatively egalitarian to very hierarchical in a short space of time.

So how might it have happened that entrepreneurs could introduce hierarchy even before a technology of coercion existed? Four possible explanations, not mutually exclusive, strike me as worth exploring.

First, coercion might have been easier even without the existence of armies and police forces, simply through the threat of exclusion from the community for those who did not accept the new hierarchical division. A forager community cannot really afford to exclude more than one or two of its members: All hands, or nearly all hands, are needed for the collective tasks of hunting and gathering. A community of farmers has fewer tasks that are strictly collective (Shennan, 2011, makes this point), though it should not be thought that it has none at all: Labor sharing between households is often important to smooth out seasonal fluctuations as well as yielding important risk-sharing benefits. If, in addition, it is hard for individuals or small groups who are expelled from a farmer community to survive on their own, the mere threat of expulsion might have had a more coercive influence than it had previously done for foragers. Kennett et al. (2009) report evidence from California's Northern Channel Islands suggesting that social stratification was more likely where there was rapidly declining marginal productivity of land. Evidence from other species supports this: Tim Clutton-Brock has argued that the extreme reproductive skew of females in meerkat communities (subordinate females have no offspring of their own but care for the offspring of the dominant female) is made possible not just by the kinship relation of the subordinates to the dominant, who is usually their own mother, but also by the fact that expulsion of subordinates in groups smaller than three or four leads to their almost certain death (Clutton-Brock, 2011).

Second, it may be that the egalitarianism of countervailing power was an equilibrium only in a statistical sense. Perhaps not all attempts at establishing hierarchy produced a successful backlash against the aggrandizers. Indeed, Brian Hayden (1995) has argued that it was the emergence of a degree of hierarchy in resource-rich environments that itself provided the spur for domestication through intensified status competition. The arguments for the egalitarianism of countervailing power imply only that most such attempts failed, not that they all did. In a forager economy, the exceptions remained unusual because the exceptions had no greater ability to reproduce themselves than the others. But in an agricultural economy, a successful hierarchical exception might then have been able to use its surpluses to build armies that could conquer and subjugate other, more egalitarian groups. Egalitarian solidarity might have been very effective militarily against hierarchical foragers but very ineffective against hierarchical agriculturists. This effectiveness could only have come from the higher populations characteristic of agricultural communities, leading armies of farmers

to outnumber armies of foragers. It would have been unlikely to come from superior technologies or better motivation. Indeed, Hanson (1989) has emphasized the greater military effectiveness of the relatively egalitarian Greek armies against the Persians—evidence that, though coming from a much later period, illustrates the general difficulty that armies of unwilling conscripts have in clashes with armies of comparative volunteers. Likewise, the greater mobility and more practiced tracking skills of foragers would have given them an advantage that only weight of numbers could offset. But weight of numbers would have been a possible source of advantage for hierarchical agricultural societies in a way that it was not for foragers.

Third, would-be hierarchs might have been able to exploit for their own purposes characteristics in their fellow citizens that had evolved for other purposes, much as parasites can exploit features of their host's metabolism that were originally adaptive for the host even though in their capacity as recruited by the parasite they reduce the host's fitness. So, for example, individual members of forager groups may have developed a willingness to sacrifice their own interests in warfare against rival groups, an argument developed in detail by Bowles and Gintis (2011) in their recent book. Then would-be hierarchs who could most effectively appeal to sentiments of out-group hostility might have been able to use these to justify "necessary" sacrifices of many kinds. Unfortunately, though, this suggestion does not explain why such a parasitic exploitation of in-group altruism and out-group hostility should have become so much easier with the development of agriculture. Furthermore, it ignores the fact that sacrifices are easier to justify if they are shared among all group members, which is difficult to square with the presence of marked hierarchy. Other features of ideological justification of sacrifice (see Yoffee, 2005, esp. pp. 38–41) may have been important later on, but we still need to explain how the previously egalitarian foragers came to be susceptible to their appeal.

A fourth possible explanation builds on this notion that in-group altruism may have coevolved with out-group hostility, by suggesting a way in which a social innovation could have introduced hierarchy without triggering the usual countervailing reactions against aggrandizers, namely, via the institution of slavery. The ethnography of modern-day foragers suggests, and the archaeology of the late Pleistocene confirms, that warfare among forager groups was probably frequent, and frequently lethal (Bowles, 2009). When a group was defeated by rivals, its women would sometimes have been incorporated into the victor population, but the males would usually have been killed, since they would have constituted a negative resource given the impossibility of ensuring their uncoerced acquiescence and the high costs of watching and guarding them. Agriculture changed all this, by creating work that could be productively performed by coerced individuals—by slaves, in short. Plowing, weeding, and harvesting can all be undertaken by workers whose legs are restrained sufficiently to prevent them from running away, and the work can be supervised by many fewer

people than are actually working—none of this is true of most foraging activity. The first hierarchies may well have been those in which indigenous farmers lorded it over slaves abducted from rival groups. It would then have been relatively easy to construct institutions of coercion aimed at creating and reinforcing hierarchy among the remaining farmers. Slaves could be offered as an inducement to those individuals who helped the first hierarchs to establish their dominance. This could have tipped the balance for many subordinate males between choosing to join a coalition to restrain an aggrandizer and choosing to join the aggrandizer.

What kind of evidence might help corroborate or refute these four hypotheses? We cannot replay the tape to watch the rise of hierarchy, but each hypothesis has testable implications. The first hypothesis (the effectiveness of the threat of exclusion) implies that, where we do see exclusion practiced by existing forager communities, mortality among the excluded individuals should be high, and we should see exclusion practiced as a disciplinary mechanism among existing agricultural communities that lack the formal institutions of coercion. The second implies that, where we find ethnographic or archaeological evidence of conflict between forager and farmer communities, mortality among foragers should be substantially higher, on average, than among farmers. The third implies, at a minimum, that we should find evidence of cults of worship or otherwise honorific treatment of high-status individuals even in societies where no institutions of coercion exist. Finally, the fourth implies that we should find evidence of slavery very early in the Neolithic, well before the rise of those states in which the existence of slavery is undisputed. Slavery should precede institutionalized coercion and not vice versa. I am not aware of systematic surveys of the evidence on any of these predictions, but the very existence of testable predictions means these hypotheses need not rest forever conjectural.

To summarize, it is not enough to show that hierarchy would have been self-sustaining once agricultural development permitted large enough surpluses to pay for the institutions of coercion. We need to show how hierarchy could initially have become established before such institutions existed. Various explanations are possible; choosing between them provides an intriguing challenge for future research.

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