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Journal of Bioeconomics

ISSN 1387-6996
Volume 18
Number 3

J Bioecon (2016) 18:229-232
DOI 10.1007/s10818-016-9214-y

Springer

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BOOK REVIEW

Culture, conflict, and the birth of a cooperative species

Samuel Bowles and Herbert Gintis: a cooperative species. Princeton University Press, Princeton, 2013, 280 pp, $24.95/£16.95 (paperback), ISBN:9780691158167

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Published online: 12 March 2016

We humans are exceptional among species in the degree to which we cooperate and compete with one another, rivaled only by the eusocial insects (e.g. ants, bees, and termites). What makes us unique is that much of our cooperation occurs among large groups of unrelated individuals without repeated interaction. How could the logic of 'survival of the fittest' have resulted in such a cooperative species? That's the question Bowles and Gintis set out to explain by weaving together various strands of theory and loads of empirical evidence from a host of disciplines, especially anthropology, biology, and economics. The book is a great success, offering a compelling theory of cooperation and conflict and how these two modes of social interaction are inextricably linked.

In explaining human cooperation, Bowles and Gintis address two kinds of explanation. Biologists refer to these respectively as **proximate** and **ultimate** explanations. At the proximate level, how can we explain the cooperation we see in the world today? Bowles and Gintis argue that it can't be based on the **self-interest axiom** of traditional economics. Instead, they argue that human cooperation emerges from a set of **social preferences**: In addition to self-interest, we care about the welfare of others, we want to uphold social norms, and we value being ethical for its own sake. At the ultimate level, how can we explain the evolution of these social preferences? Traditional sociobiological explanations focus on a combination of **inclusive fitness** and **reciprocity**, resulting in a model of human nature not too different from *Homo economicus*. The mutual reinforcement between this kind of evolutionary argument and the self-interest axiom is captured by "the idea that selfish genes must produce selfish individuals" (p. 45). Bowles and Gintis argue that this logic is false. Developing models of **cultural**

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group selection and **multi-level selection**, they show how natural selection can forge the kinds of social preferences we see in modern humans, social preferences that care about more than just self-interest.

I'll begin by summarizing some of the key chapters. Chapter 1 provides a concise and useful summary of the book. Chapter 2 provides the basic frameworks for all of the analyses. As an anthropologist, I found the explanation of the Preferences, Beliefs, and Constraints approach used in economics very useful. I'm sure that economists will find the explanations of culture, gene-culture co-evolution, and niche construction, core concepts in human sociobiology, equally useful. In Chapter 3, Bowles and Gintis review the behavioral economics literature from the last few decades and make a case for why **strong reciprocity**, a predisposition to both cooperate with in-group members and punish non-cooperators, is the most parsimonious explanation. This will likely be old news to economists, especially those well versed in behavioral economics, but it is a great review for evolutionary anthropologists and biologists. What should be of interest (and potentially controversial) to economists are cross-cultural experiments showing substantial behavioral variation. Besides the obvious argument that cultures and institutions influence behavior, Bowles and Gintis argue that cultures and institutions, over historical timescales, also shape preferences.

In chapter 4, Bowles and Gintis survey the literature on the evolution of human cooperation. In their taxonomy, explanations of cooperation fall into one of two broad categories: arguments based on inclusive fitness and arguments based on reciprocity. Unlike chapter 3, this chapter is old news to evolutionary researchers, but should make for a really good review for economists. These two mechanisms, so the argument goes, resulted in altruism directed toward close kin and mutually beneficial cooperation toward non-kin. This presents us with a problem because much of modern cooperation can neither be attributed to biological relatedness nor to mutually beneficial cooperation (e.g. what makes someone willing to sacrifice himself for his religion?). A popular explanation of human cooperation hinges on the idea of **evolutionary mismatch**: The modern world is vastly different from the world in which our social preferences evolved. In the late Pleistocene, humans lived in very small-scale societies characterized by mostly close kin interaction and/or repeated interactions with known partners, a world that would have favored a psychology of indiscriminate cooperation. Drop that Stone Age mind into the modern world and mistakes (from the perspective of the evolved function of cooperation) are bound to happen (e.g. humans don't understand, at least on some unconscious level, what it means to engage in the kind of one-shot anonymous social interactions typical of behavioral economics experiments). Another example of evolutionary mismatch may be our preference for sweet foods, a preference that was adaptive in ancient environments when sweetness was only associated with fruit but is maladaptive in the modern world. With regards to cooperation, the argument is that we spent hundreds of thousands of years living and adapting to life in small-scale societies. We have only lived in large-scale societies for a few thousand years, not enough time for our minds to evolutionarily adjust to modern reality.

Other students of sociobiology (myself included) object to this line of reasoning for one of two reasons. First, did our Pleistocene ancestors really live in small, isolated bands? Second, even if they did, has natural selection not had enough time to re-

engineer our psychologies for life in larger groups? Bowles and Gintis tackle the first objection (making the second objection moot). Over the last few decades, scientists from a range of disciplines including paleoclimatology, bio-archaeology, and genetics have compiled many new facts about our evolutionary past. In chapter 6, Bowles and Gintis review this evidence as well as the ethnography and history of pre-state societies. This is where the book shines. Rather than postulate about our past, they document it using the latest evidence. I am unaware of any other source that provides such a detailed and thorough review. And the picture that emerges is not a world of small, isolated bands. Instead, our ancestors seem to have lived in groups of several hundred, been cosmopolitan (complete with far-flung co-insurance, trading, mating, and other social networks), and warlike. In short, they were a lot like us, only on a smaller scale. I'd recommend the book for this chapter alone.

Motivated by this clearer window into our past, chapters 7–9 develop a series of mathematical models and agent-based simulations that form the core of the authors' theoretical argument. These chapters borrow heavily from the theoretical work on cultural evolution and gene-culture co-evolution developed by Boyd and Richerson (long-time collaborators of Bowles and Gintis), summarized in *Not By Genes Alone* (Norton, 2006). In genetic evolution, Mendel's laws describe transmission and Darwin's theory describes the evolutionary process. In cultural evolution, transmission is nothing like Mendelian (e.g. cultural traits need not be discrete, can be blended, can be inherited from individuals other than biological parents, can be recombined during transmission). This difference in inheritance potentiates a form of group selection in cultural evolution that is unlikely in biological evolution. Bowles and Gintis use these ideas to develop models that describe how institutions (like segmentation and reproductive leveling) foster the evolution of behavior that is individually costly but group-beneficial (Chapter 7), the evolution of parochial altruism (i.e. be nice to "us" and nasty to "them"; Chapter 8), and the evolution of strong reciprocity (Chapter 9).

By bringing together the latest data and theory that incorporates culture into the evolutionary process, Bowles and Gintis paint a much richer picture of our evolutionary past. Our capacity to cooperate was forged in a crucible of culture and conflict. The mismatch explanation of cooperation has been accepted for far too long simply because there was no contender. As the political adage goes, "You can't beat something with nothing." Bowles and Gintis provide us with something, something quite compelling. If I had to criticize the book, it would be that the story is complicated, weaving together various kinds of evidence and argument. For the typical reader, specialized in one field, wading through this book may be a slog. Worse, the editing at time seems sloppy. The book feels like it was rushed. Nevertheless, I think the book is well worth the effort for anyone interested in how we got to be the cooperative species we are.

So how can we use this model of human nature Bowles and Gintis present us with? How might knowing about our evolutionary history shed light on our current condition? This is where things get tricky, maybe even depressing. The core argument Bowles and Gintis make is that our evolutionary past was characterized by within-group cooperation and between-group competition: Cooperation at one scale of social organization was inextricably linked with competition at a higher scale. The repetition of this dynamic over countless generations imprinted us with a cooperative predisposition, but of a parochial variety (i.e. we are predisposed to be nice to in-group members

and nasty to out-group members). This process no doubt continued, albeit in terms of history not evolution, with the dawns of agriculture and industrialization, only groups became larger and larger. And as a result, so too did the scale of our problems. In fact, some of our problems like climate change threaten the whole world. So how do we save ourselves, from ourselves? The logic of between-group conflict to foster within-group cooperation, the very logic that may have got us into problems like global warming, surely cannot get us out of it. Thomas Huxley, in his essay "Evolution and Ethics" (1893), echoed a similar concern:

> For his successful progress, throughout the savage state, man has been largely indebted to those qualities which he shares with the ape and the tiger; his exceptional physical organization; his cunning, his sociability, his curiosity, and his imitativeness; his ruthless and ferocious destructiveness when his anger is roused by opposition.
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> But, in proportion as men have passed from anarchy to social organization, and in proportion as civilization has grown in worth, these deeply ingrained serviceable qualities have become defects. After the manner of successful persons, civilized man would gladly kick down the ladder by which he has climbed.

How might we kick down the ladder that helped us climb so high? Bowles and Gintis argue that despite an evolved predisposition toward parochial altruism, we need not be prisoners of this dilemma. Part of our evolved predisposition involves the capacity for behavioral and psychological modification through socialization and enculturation. We can, in a sense, override our evolved tendencies through social engineering, trading in our parochial altruism for a more cosmopolitan strain. By changing our socialization environments, we can fool ourselves into seeing everyone as an in-group member (despite having not been evolved to do this) and foster cooperation on a global scale without the attendant competition between groups.

Whether or not this prognosis is correct, the questions Bowles and Gintis raise in this book are sure to fascinate. Why we are such a cooperative species has been a mystery since the beginning. Darwin pondered this question and offered up some intriguing suggestions, including a tribal group selection explanation similar to the modern theory of cultural group selection. We've made a lot of progress on this question in the intervening years. The first major breakthrough was the sociobiology revolution of the 1960s, especially Hamilton's notion of inclusive fitness and Trivers's work on reciprocity. For a long time, the explanation of human cooperation rested on these two pillars of sociobiology. But it's become increasingly obvious they cannot bear the burden of explanation alone. There is too much about human behavior that is missing. The capacity for culture and the related rise of inter-group warfare needs to be a part of the story. For anyone interested in making sense of the evolution of human cooperation, I would highly recommend Bowles and Gintis's *A Cooperative Species*, for its theoretical insights and especially for the unmatched collection of data that bears on this question.