

**TIM LEWENS, *Cultural Evolution: Conceptual Challenges*,
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This book is a philosophical examination of the scientific study of cultural evolution. It focuses on the Darwinian approach to cultural evolution in which culture is treated as an inheritance system that evolves by mechanisms broadly analogous to the evolution of genes. This field has attracted a lot of attention, not all of it favorable. A number of criticisms have been articulated by socio-cultural anthropologists, evolutionary biologists and others. Lewens' objective is to sort out the main issues involved in the disputes over the role of Darwinism in the social sciences. Is the work of the Darwinian cultural evolutionists basically sound or fundamentally flawed?

Humans learn from one another and what we learn from one another changes over time. Over the last century, the proportion of people in industrializing countries who could drive a horse or ox team has dropped from an appreciable percentage to near zero. Lewens divides approaches to understanding this process into three pragmatic categories, *historical*, *selectionist* and *kinetic*. Historians describe cultural change but do not have an ambitious theoretical agenda. Selectionists mean to account for changes in culture in terms of a Darwinian struggle for existence on the part of ideas, techniques, and practices. Kinetic theorists imagine a broader set of evolutionary processes affecting cultural evolution than just close analogs of natural selection. Human individual and social learning are inventive and biased in ways that have their closest biological analogs in sexual and artificial selection rather than in natural selection. The key thing that makes kinetic theories evolutionary is that learning biases have population level effects. For example, the repeated action of biases over many generations can have a cumulative effect, such as historians

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document in phenomena such as technology and legal traditions. Lewens offers Robert Boyd's and my work as an exemplar of the kinetic theory, which is the main focus of the book.

Lewens finds the kinetic theory most interesting because it is more general than the selectionist account. Some, but not all, forces acting on culture bear a close resemblance to natural selection acting on genes. Further, the critics of cultural evolution have not understood the differences between cultural selectionist and kinetic accounts. Cultural selectionists, such as proponents of memetics, propose a close analogy between genes and culture that critics correctly complain does not do justice to the rather different properties of culture. For example, cultural transmission need not involve replication in the same sense that DNA is replicated and it has the property of the inheritance of acquired variation. Kinetic theorists draw only a loose analogy between genes and culture.

Critics of the kinetic cultural evolution project are often unfamiliar with its details or are too eager to repeat old misunderstandings of evolution. Lewens discusses the muddled charge leveled by Adam Kuper that cultural evolutionists are progressivists. Another frequent complaint is that the cultural evolutionists' models do not add anything to the eclectic common-sense explanations of historians for historical changes. To explain the success of some particular cultural variant in some particular environment in terms of its "fitness" does not do any real work. However, the kinetic theorists' models, such as models of conformist transmission, are about specific processes that affect cultural evolution not about some vague notion of fitness. In any case, as Lewens points out, cultural evolutionists are as keen to explain cases where cultural evolution has apparently evolved in maladaptive directions as cases where it is apparently adaptive.

Lewens spends a chapter evaluating the idea that culture can usefully be defined as information as Boyd and I did in our 1985 book. This idea was borrowed from biologists who talk of genes being information based entities. Lewens finds fault with the existing attempts to specify exactly what information means in the context of culture and cultural transmission but has no objection to its informal usage as a cover term for ideas, skills, beliefs, attitudes and the like.

Much of the debate within the evolutionary social sciences is epitomized by the use of the term "human nature" by thinkers like E.O. Wilson, John Tooby, Leda Cosmides, and Steven Pinker. Cultural evolutionists, by contrast, make relatively little use of the term. Lewens devotes two chapters to this issue in part because critics of the cultural evolutionists like Maurice Bloch, Tim Ingold and others, think that the kinetic theorists are committed to a strong distinction between human nature and human culture. He shows that giving human nature a substantive role in human evolution is indeed fraught, but that cultural evolutionists have no need of human nature. Hence Bloch et al.'s skepticism is unwarranted. In fact, cultural evolutionists use the term "gene-culture coevolution" to refer to the processes that intimately link the genetic and cultural streams of inheritance. Cultures, for example, during development tap into ancient, highly conserved emotional systems to motivate culture specific behaviors. In evolutionary time, culturally motivated social selection has probably shaped genes to produce the relatively docile temperament of humans compared to other apes. At the same time genes have sufficiently

harnessed culture to make us an extremely successful species. This profound entangling of genes and culture in developmental and evolutionary processes means that dissecting out a human nature based on the effects of genetic evolution and development from those based on cultural evolution and socialization is impossible. Developmental Systems Theorists, echoing Bloch and Ingold, are suspicious that models with separate genetic and cultural channels do not do justice to the complex developmental processes that entangle them and that they thus still retain a flavor of human nature. Lewens gives a qualified defense of the kinetic theorists on this score by reviewing the work on adult lactase persistence, one of the signature examples of gene-culture coevolution.

Other critics of cultural evolution fault its commitment to formal models of evolutionary processes. One fear, that the models hew to unreasonably close analogies with concepts from evolutionary biology like fitness, is easily dismissed. Many cultural evolutionary models study phenomena in which fitness plays an ancillary or no role. Similarly, the complaint that the models cannot be faithful to the rich complexity of the ethnographic or historical record has little traction because the kinetic theorists concede the complexity of the sociocultural world. Models, like controlled experiments, give us insights that are not attainable by contemplating a complex system directly, but only very naïve modelers confuse their simple models with the much more complex world from which they are abstracted. Lewens reviews a number of examples of kinetic modelers critiquing each others' simplifying assumptions on both formal and empirical grounds. Clearly, not all models are well conceived and some simplifications are empirically more plausible than others. Cases differ, so a model that is acceptable in one context may prove deficient in another. It is by contesting these issues that modeling contributes to science.

Richard Lewontin, among others, argues that cultural evolutionary models cannot handle the all-important issue of power. He rightly points out that individuals do not necessarily freely chose the cultural variants they prefer but may often be more or less coerced or influenced to adopt particular variants by individuals or groups of individuals with greater economic or political authority. Lewens notes that conformist and prestige biased transmission do take into account unequal weights of individuals in the transmission process. Peter Turchin's models of human history have elite and commoner classes with explicit power differentials. His models are inspired by community ecology. Lewens imagines, quite reasonably, that the kinetic models inspired by population genetics can only do some of the work needed for a comprehensive theory of cultural evolution.

Under the term cultural adaptationism Lewens discusses the relationship between Tooby and Cosmides' Evolutionary Psychology and the kinetic cultural evolutionists. Lewens argues that the differences between these two branches of evolutionary social sciences are exaggerated and correctly points out a considerable number of commonalities in their approaches. To my mind, whether the differences are ones of emphasis and style or are more profound comes down to an exercise in literary interpretation of Tooby and Cosmides' texts, which are perhaps not clear enough or consistent enough to bear the weight of philosophical or scientific analysis. Their critique of the Standard Social Science Model can be read as a radical, wholesale

rejection of any substantial role for culture as understood by most social scientists and by the kinetic cultural evolutionists. In his 2015 essay in *This Idea Must Die*, edited by John Brockman, Tooby nominates learning and culture as concepts that are impeding scientific progress and ought to be discarded. Lewens says that Cosmides and Tooby are not committed to an implausible denial of cultural variation, but it seems that, plausibly or not, they are. Clearly, some Evolutionary Psychologists do not share this radical rejection, for example Clark Barrett. Similarly, Tooby and Cosmides' concept of human nature seems to express a commitment to a reading of the Modern Synthesis that privileges natural selection on genes as the only ultimate explanation for adaptive behavior, ruling out the action of cultural group selection or culture led gene-culture coevolution. Here I think Lewens has, uncharacteristically, missed a beat. On the other hand, his critique of the attempt to infer cognitive architecture from high level adaptive considerations is correct.

Lewens' conclusion at the end of the book is that we need an eclectic approach to the problem of cultural evolution, drawing upon all of the relevant biological and social sciences and upon history. He illustrates this point using the emotions. He asserts that cultural evolutionists have generally fallen in with cognitive depictions of psychological processes to the relative neglect of the emotions. I agree that the emotions deserve more attention and that his specific suggestions are apt.

In sum, *Cultural Evolution* explores claims and critiques of the kinetic cultural evolutionists and concludes that it is a generally sound enterprise, notwithstanding pointing out weaknesses, limitations, unfinished work, and sometimes too-grandiose claims.