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A Review of Cultural Evolution: Conceptual Challenges by Tim Lewens (Oxford University Press, 2015)

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Are genes the only inheritance system? Should researchers treat cultural information as an inheritance system in its own right? If so, *what* is culture and *how* is it transmitted? How do cultural and genetic inheritance systems interact? Questions like these have sparked much debate across the social sciences and humanities. While they remain controversial, cultural evolutionary approaches are now commonplace in archaeology and evolutionary anthropology. Theories and methods initially developed to investigate genetic inheritance are increasingly widespread in these fields. Philosopher of science Tim Lewens' latest book, *Cultural Evolution: Conceptual Challenges* explores the problems and prospects for cultural evolutionary approaches. His book has three objectives. First, it characterizes and then arbitrates the debate over Darwinism in the social sciences. Second, it highlights the virtues as well as the current limitations of cultural evolutionary approaches. Third, it identifies some promising lines of inquiry for future work on cultural evolution and explores how this field might best enhance its appeal to critics.

Lewens has demonstrated his interest in cultural evolutionary approaches for over a decade (e.g., Lewens 2007; 2012a; 2012b; 2013). In 2012 he described cultural evolution as a "mature field, which has already illuminated many instances of cultural change" (2012b). This latest publication comes at an exciting time for the study of cultural evolution. A new professional organization, the [Cultural Evolution Society](#) (CES), has attracted thousands of members. Several major international projects (e.g., the [Seshat: Global History Databank](#)) adopt an explicit cultural evolutionary approach to find real-world solutions to pressing societal problems. These recent developments in the study of cultural evolution make this book quite well-timed and important. Lewens' three objectives for *Conceptual Challenges* are addressed across 183 pages in nine chapters. After a few introductory and evaluative comments about the structure of the book, this review will provide a brief overview of the content covered across its nine chapters before outlining some areas in which it could be improved.

This book is largely a success. Many of the strengths in this book stem from Lewens' complex and nuanced relationship with the field of cultural evolution. At

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times (e.g., Chapter 3), he operates as a dispassionate and critical commentator. The detached perspective adopted by the author enables him to discuss and assess the field as a whole. In these sections, he offers general insights into major debates from thirty thousand feet. Elsewhere (e.g., Chapter 9), however, he zooms in to examine specific and hitherto neglected topics. Far from being a detached observer in these sections, Lewens makes a convincing argument for why he should be considered as one of the field's most active participants. By straddling the participant/observer divide throughout the book, the author is able to provide a unique and multi-faceted account of the state of cultural evolutionary approaches. However, the author's double role is also at times a cause for confusion. For example, writing as an observer, Lewens states flatly that philosophers like himself should not tell cultural evolutionists how to define culture. Later, writing as a participant, he defines culture as "an open-ended heuristic prompt in which bodies of behaviors, skills, beliefs, preferences, and norms are reproduced from one generation to the next." This inconsistency is one of the book's weaknesses. This lexical definition of culture also leaves much to be desired for cultural evolutionists, who seek to identify and measure key elements of culture to document patterns of change over time. Cultural evolutionary analysis requires a conceptualization of culture that is much more detailed, amenable to measurement, and much more comprehensive. Oddly, when invoking cultural evolutionary concepts to investigate the neglected topics of the emotions (a topic I return to later), the author criticizes cultural evolutionists for not including the emotions in their definitions of cultural information. As we have just seen, however, the author neglects to include the emotions in his own definition. Thus, while the author's ability to assess cultural evolutionary approaches as both a participant and an observer is one of the book's primary strengths, he sometimes falls short of his objective of identifying and advancing promising lines of inquiry.

As the subtitle suggests, *Conceptual Challenges* does not explore the technical challenges of borrowing theories or methods originally developed in the biological realm to analyze the cultural realm. Instead, much of the book is dedicated to exploring what Lewens sees as the three types of cultural evolutionary approaches—historical, selectionist (which I return to later), and kinetic. He develops and defends this typology in the book's first two chapters and dedicates the bulk of the book to examining 'kinetic' approaches to cultural evolution. He quickly dispenses with historical approaches, saying that historical approaches essentially analyze later states of a culture with reference to earlier states and often argue that the transition from these earlier states was 'gradual'. In my view, the author's decision to focus almost exclusively on what he calls 'kinetic' approaches is not well-motivated. It is important to note that 'historical'

approaches vary significantly in how they conceptualize ‘gradual’ changes in cultural systems. For example, compare the conceptualization of evolutionary changes by Currie and Mace (2011) to that found in Spencer (1990). For evolutionists, it is worth noting, change is everything. According to Lewens, proponents of kinetic approaches to cultural evolution contend that the historical analysis of large-scale changes in cultural systems can be gainfully conducted by focusing on cultural information at a coarse-grain, population level. This level of focus largely precludes the need to examine individual development, multitudinous episodes of social learning, or any other assimilation of information that ultimately contributes to the population-level aggregation of cultural information. The author uses the analogy of the kinetic theory of gases to emphasize this approach’s focus on culture as an emergent property. For proponents of kinetic approaches, the focus on inquiry is the aggregation (i.e., the population) and the emergent properties of this aggregation are seen primarily as the result of interactions between individuals, not as a consequence of properties intrinsic to the individuals themselves (e.g., biology or biochemical characteristics of individual humans). I find these descriptions and examples of ‘kinetic’ approaches to be quite instructive, but prefer the term ‘populationist’, which makes the levels of analysis more explicit.

While the Introduction and Chapter 1 introduce and defend a typology of cultural evolutionary approaches—historical, selectionist, kinetic—Chapter 2 attempts to arbitrate some areas of common debate and the causes for much misunderstanding by both proponents and detractors of cultural evolutionary approaches (e.g., Bloch 2012; Ingold 2013). These sections serve as a useful primer for those who are unfamiliar with current debates in the field. For example, while discussing ‘selectionist’ approaches, Lewens criticizes the memetic assumption that cultural variants have powers akin to those of genes. He points out, following others (e.g., Henrich and Boyd 2002), that there are no such things as a natural class of cultural replicators or some cultural germ line whose structure is necessary and causally responsible for the structure of the resembling daughter idea. He also dispatches the often-stated charge that cultural evolutionary approaches promote (implicitly or explicitly) or somehow rely on what is frequently described as ‘19th-century notions of progress’ (e.g., Kuper 2000). Like the modern conception of genetic evolution, he explains persuasively, cultural evolutionary approaches have no intrinsic connotation of progress. Lewens might have added that several cultural evolutionists have gone to great lengths to make this point clear (see Currie and Mace 2011 for a discussion).

Chapters 2 through 7 explore the value and promise of the populationist approach and the importance of building mathematical models to improve our understanding of cultural evolution. Throughout these chapters, one discussion

stands out because it addresses prominent critics of cultural evolutionary approaches directly. In Chapter 6 Lewens provides a robust refutation of Tim Ingold's criticisms regarding the utility of cultural models. In brief, Ingold (2013) dismisses cultural modelling categorically because much of the detail and contextual cultural information provided by ethnographic description and analysis is stripped away by cultural evolutionists during the construction of cultural models. In response, Lewens rightfully argues that abstraction is a necessary and highly productive tool that enables cultural modelers to better examine and explain emergent properties and processes of cultural systems. By comparison, argues Lewens, physicists interested in the behavior of a volume of gas do not and should not painstakingly trace the idiosyncratic biography of each atom with the volume of gas. As long as cultural models are kept up-to-date with current scientific knowledge (by incorporating discoveries from social psychology, rich ethnographic description, and archaeological and historical datasets), there is much to be gained from cultural models. While Chapters 6 and 7 address several key criticisms of cultural evolutionary approaches, Chapter 8 provides a critique of much of evolutionary psychological research. Here, Lewens makes two primary arguments (again, following others; e.g., Karmiloff-Smith 1998). First, modern cognitive adaptations are potentially quite different from those of our Pleistocene ancestors. Second, not enough is known about the Pleistocene to identify the problems that humans evolved to solve during this time (e.g., climatic conditions, botanical and zoological challenges, constraints on social learning).

This book's final chapter (Chapter 9) is entitled *Eclectic Evolution: The Case of the Emotions*. Here, the author identifies the emotions as a largely neglected topic in cultural evolutionary research. Dispensing with his assumed role as a dispassionate observer, Lewens tries his hand at guiding cultural evolutionary research as an active participant. He garners insights for his conceptual analysis from ethnographic and psychological research to argue for a more embodied understanding of the emotions that more fully appreciates influences by social learning and enculturation. Lewens is correct to say that the emotions have not received much attention by cultural evolutionists and he should be praised for making a step towards the eclectic synthesis that he promotes throughout the book. However, Lewens' cultural evolutionary account of the emotions in this book's final chapter ultimately delivers an awkward and unconvincing combination of 1) an overly abstract discussion on the construction and expression of emotional states and 2) an unnecessarily brief summary of the major conceptual issues discussed throughout the book. Two strong conclusions are offered in the concluding pages of this book. First, phylogenetic models should serve as the cornerstone of future work on cultural evolution. Second, the

development of formal mathematical population models will enable future work on cultural evolution to hone in on the most promising theoretical propositions. While these conclusions are laudable, Lewens neglects to employ these two tools for his analysis of the emotions. He does not offer a systematic survey of cross-cultural variation in emotions by making use of rich ethnographic or historical records, nor does he provide an outline for how future research into the emotions should progress along these lines. While he sees phylogenetics as a cornerstone of the kinetic approach to cultural evolution, he gives his readers a superficial treatment of phylogenetic research to date. Thus, while I find the author's proposed direction for future research to be reasonable (I will return to this topic), I would have preferred to see his recommendations put into practice.

Lewens largely achieves his major objectives throughout the book. In his final chapter, he calls for an 'eclectic synthesis' that combines theory and methods from across the social science and humanities. He encourages scholars to unite seemingly disparate disciplines under the banner of cultural evolution to address novel and important research questions. While these calls will be well-received by those working in the rapidly growing field of cultural evolution, one glaring omission remains. Lewens fails to recognize the potential for cliodynamics to shape future cultural evolutionary research (Turchin 2008). Cliodynamic research is actively producing exactly the sort of high-quality data and analysis on cultural information and processes that Lewens calls for in this book. The Seshat: Global History Databank, for example, has already put Lewens' proposed 'eclectic synthesis' into practice while analyzing thousands of years of historical data at various levels of analysis, including the population level (Turchin et al., 2015). This book's narrow focus on a select number of scholars of cultural evolution from within populationist approaches means that it misses important studies that combine insights from a broad range of disciplines, ranging from historical macrosociology, economic history, and cliometrics to evolutionary anthropology and archaeology. These studies demonstrate how cultural evolutionists are busily creating robust datasets to test quantitative predictions from mathematical models (e.g., Turchin et al., 2012). While Lewens does acknowledge some of this research (e.g., Turchin's work on the measures of power; Chapter 7), he does not adequately appreciate the potential for structured historical and archaeological data produced by the Seshat: Global History Databank and aligned projects to provide a foundation for future cultural evolutionary research.

Conceptual Challenges would also have benefitted from an exploration of the theories that underpin much of modern cultural evolutionary theory. Synthetic intellectual histories of the field, such as Carneiro's *Evolutionism in cultural anthropology: a critical history* (2003), are not referenced, giving readers the sense that this book seeks to tell cultural evolutionists where to go without

demonstrating an appreciation for where these approaches have been. Despite these deficiencies, Lewens is largely successful in achieving his major objectives while keeping this book imminently readable. He provides a broad and impressive overview of several major debates in evolutionary approaches to culture change. He also successfully highlights many of the virtues of cultural evolutionary approaches. The author's knack for observing and synthesizing current debates in the field is laudable. In my view, Mesoudi's recent book, *Cultural Evolution: How Darwinian Theory Can Explain Human Culture and Synthesize the Social Sciences* (2011), does a better job of surveying a broad range of cultural evolutionary theories and methods across disciplines, while *Conceptual Challenges* provides a more partial analysis of cultural evolutionary approaches, but does so in a more neutral and critical manner. For example, Lewens argues convincingly against the suggestion by some cultural evolutionists, including Mesoudi (2011), that a Darwinian evolutionary approach will encourage a broad synthesis and increased productivity across the social sciences. Instead, he argues that the lack of progress in the social sciences is a consequence of widespread disciplinary balkanization, not a deficiency in widespread support for Darwinian evolutionary approaches to culture. Lewens is right to suggest that social scientists can produce an eclectic synthesis by drawing insights from a wide range of disciplines, including economics, sociology, biology, developmental and cognitive psychology, neuroscience, physiology, linguistics, history, ethnography, geography, philosophy, literary and religious studies, etc. To redress social science's lack of cumulative advancement, social scientists need not emulate Darwinian theoretical approaches *per se*, but the transdisciplinary that characterizes scientific approaches in general. Modern cultural evolutionary research analyzes cultural information at different levels of granularity to answer different research questions. Therefore, the goal of achieving a multidisciplinary synthesis requires that researchers attempt to reconcile datasets of cultural information at various levels of analysis.

I finished this book convinced that philosophers of science will continue to play an essential role in examining the sometimes disordered conceptual foundations of cultural evolutionary approaches. Lewens' wealth of knowledge about the history of science and evolutionary theory make him a valuable contributor to this emerging field. He is at his best when he uses his expertise to explore debates regarding how theories initially developed to investigate organic evolution in the natural sciences should be used to investigate the cultural realm. Critics and proponents of cultural evolutionary approaches as well as the those unfamiliar with the topics of the debate will benefit from this accessible account of major conceptual challenges

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