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## REVIEWS AND NOTES

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A REVIEW OF  
*'GLOBALIZATION AS EVOLUTIONARY PROCESS:  
MODELING GLOBAL CHANGE'*

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*Globalization as Evolutionary Process: Modeling Global Change.* Edited by George Modelski, Tessaleno Devezas, and William R. Thompson. London: Routledge, 2008.

This volume constitutes an impressive attempt to apply evolutionary analysis to globalization, which is one of the most popular, but least well-defined terms in the contemporary study of global relations. The editors begin with a clear and reasonable definition of globalization: the emergence of institutions of a planetary scope. Subsequent essays are designed to help us understand the nature of that development. The volume focuses on applications of evolutionary methodology, modeling and forecasting over the longest historical term. Twenty-four scholars from seven disciplines and ten countries are included in this impressive scholarly effort.

The five chapters of the first section focus on evolution as a global social process. Of particular interest, especially to scholars who are less familiar with this perspective, are chapters two and four. In chapter two, Modelski considers the application of evolutionary thinking to social processes. He then presents an efficient and persuasive outline of the evolution of global institutions that begins in 930 CE, and touches on some of the methodological challenges facing evolutionary analysis. Chapter four is titled 'Measuring long-term processes of political globalization' but Thompson offers more than this. Before we measure anything we have to know where to focus our analytical sights. Thompson identifies a dozen processes that are vital to global politics and reviews their associated measures. These include complex concepts like system leadership, power balancing processes, and colonization, along with more straightforward variables like trade and spending. He concludes that we have enough data to begin to think about globalization from an evolutionary perspective. More to the point, we also seem to be sophisticated enough regarding these concepts and measures to begin serious analysis. After completing the first few chapters the reader has a sound understanding of evolutionary processes as applied to social science and global history, as well as a catalog of methods for identifying relevant phenomena.

In the three remaining chapters of the first section we are provided with both specific and general historical models. Devezas and Modelski consider Portugal's expeditions into the world from the 14<sup>th</sup> through the 16<sup>th</sup> centuries, the physical attributes of

which (expeditions, campaigns, bases, imports) fit various power-law and associated evolutionary dynamics. The fifth chapter by Rennstich takes on the question of whether globalization is a self-organizing process, while Attinà's final chapter places theories of long-term change in comparative perspective. By the end of the first section the reader has a viable theoretical and historical understanding of evolution, its processes, measures, and applications. The evolutionary perspective differs from the currently popular rational choice analysis in that it features changeable (not fixed) preferences and constraints; recognizes the process of trial and error (as opposed to making assumptions of ends-means rationality), and focuses on institutions, transitions and the long-term (as opposed to decisions, equilibrium and the short term).

In the second section, on models of long-term change, we find mathematical, biological, demographic and historical treatments. These are offered not as alternatives but as interdependent directions from which to understand global-level processes. Korotayev illustrates the manner in which large-scale processes are easier to model than small-scale processes, with special attention to successful efforts regarding demographic and technological growth. The point of this chapter is not to present definitive models of such processes as much as it is to illustrate in a rigorous manner that such models are possible, already well developed, and can be used to understand long-term trends. The two chapters that follow employ a variety of methods to help explain the periodic waves of world-system integration (Turchin), and waves of urban growth (White, Tambayong, and Kejzär). Both are sophisticated attempts to understand fundamental human processes over periods in excess of one thousand years. Both suffer from problems of data availability, but do well with existing information and offer important conclusions. The remaining chapters in this section are more conceptual in nature. Pirages speaks to the biology of population integration and disease, noting that the same forces that are bringing us closer together may incubate threats to our survival that will either necessitate collective action or compel fragmentation. The chapter by Catia Antunes places the concept of globalization into its proper historiographical context.

The third set of chapters take global institutions to be a function of global information networks. If the medium is the message, then the term 'information age' is more than just an evocative title. For Kumon and Yamanouchi, 'information intelPrises' constitute the latest defining element of the modern world-system, and their dynamics are reflected in various globalizing processes. Heylighen takes information as the infrastructure of global evolution: '*Natural selection therefore, by definition, creates information: the selected system now "knows" which of its variants are fit, and which unfit. The more variation and selection it undergoes, the more knowledge or information it accumulates, and the better it will be able to tackle the problems that the environment throws at it*' (p. 285, emphasis original). This analysis offers a rare non-cyclical interpretation. The chapter on the growth of the internet by Devezas, Linstone, and Santos is among the most interesting. The internet is identified as a basic innovation, it is placed into the context of a generational learning (evolutionary) model, and our position in the process of global innovation is charted, with implications regarding behavior at the level of the firm, the state and the global system. In the final chapter of this section, Hakken recognizes the value of both an evolutionary perspective and efforts at modeling, but urges us to place our efforts into the broader conceptual frame of global cultural evolution.

The last section concerns social forecasting and simulations. These tools require the integration of several (often contradictory) processes in an attempt to discern the nature of the future global system. Hughes applies his *International Futures* model to globalization and finds problematic negative feedback loops and data problems that limit the utility of current efforts. In order to gain additional perspective on the challenges of forecasting, Reuveny reviews various elements of world models and their outputs. He is not optimistic regarding our ability to create a viable model of globalization in the short term. Klüver and Klüver seek to avoid certain of the pitfalls Reuveny identifies, especially with regard to modeling cultural processes, with their 'sociocultural algorithm'. They write on the application of that model to various temporal and geographical contexts.

'Globalization' has become a synonym for nearly everything that happens, and scholars (especially in international relations) have rarely undertaken a focused analysis that applies a proposed method to such an impressive range of ongoing social processes. This volume is different. It organizes its intellectual efforts in an especially useful manner. The evolutionary perspective emerges as a powerful tool for explaining and understanding globalization. The chapters take the reader from the key theoretical components of an evolutionary orientation through issues of conceptualization and measurement, historical analysis, advances in modeling, the impact of information age phenomena, forecasting and simulation. The volume delivers more than is promised, and concludes with a thoughtful assessment of what has been done, and the challenges that remain.