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A Review of:

**Evolutionary Paradigms in the Social Sciences.
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The International Studies Quarterly is the major scholarly journal of the International Studies Association, the professional association of international relations scholars in various disciplines, mostly in the social sciences and particularly political science. The journal does not publish many special issues, and it is, therefore, a matter of note when one appears as it did in September of last year. The topic was evolutionary paradigms in the social sciences. The issue is of interest to readers of this journal because of the diffusion of evolutionary theory into the social sciences and the forms that it assumes in this environment; eventually some new specific adaptations may feed back into general evolutionary theory.

Evolution has not been a hot topic in international relations. Realism, the dominant theory, suggests that the deep structure of world politics is fixed, with standardized units and attributes. The international system includes nation states. Successful nation states are selfish. They define their interests in terms of power and follow policies shaped for power maximization. Those that do this best live long and prosper. Those that do not end up on the ash heap of history. Realist theory has obvious similarities to the evolutionary schema. There is an environment. Units must adapt to it. At the same time, standard evolutionary mechanisms are severely constrained in the Realist model. There is little room for random mutation or natural selection into alternative evolutionary pathways. The system does not change over time, nor do the units. In the world of the power robots, only the number and size of the units and their means for achieving power vary.

With the end of the Cold War and the collapse of the Soviet Union, Realist theory has come under increasing critical evaluation. Serious change in the system and in the actors does seem to be possible. Further, biological metaphors such as genetics and evolution are gaining increasing attention as possible paradigms in other fields through a process of memetic diffusion. The recent special issue of the International Studies Quarterly is an important step in this memetic reproduction. There are six articles, each of which makes an important contribution to an expanded evolutionary understanding of international relations.

The lead essay, by George Modelski and Kazimierz Poznanski from the University of Washington at Seattle, sets the frame for the rest of the volume. Entitled "*Evolutionary Paradigms in the Social Sciences*", it sets out the basic discussion of evolutionary theory and its application to international relations and other social settings. Modelski is a major figure in the study of international relations, best known for earlier work on the nature of the international system and, more recently, on the rise and decline of world powers. He is also the author of the second essay on an "*Evolutionary Paradigm for Global Politics*". In this piece, Modelski is concerned with the evolution of "long-term institutional change at the global level" (316). Modelski suggests that "the global political system is a population of policies or strategies". Further, "global political evolution," according to Modelski, "is a four-phased learning process whose key operators are variation (innovation), cooperation, selection, and reinforcement". "Global politics," he concludes, "coevolves with global economics, community, and opinion" (321).

The third essay, by Andrew Farkas from Rutgers University, applies an evolutionary perspective to foreign policy decision making. He constructs "evolutionary models" that "show how a collective actor, such as a state, can appear to behave rationally, even if the individuals who comprise that actor are not rational themselves" (343). Farkas bases his theory on the evolutionary principle that "pieces of information are transmitted at different rates based on the attributes of the information." Much foreign policy information, he believes, is "inherited information," and "changes in foreign policy can be explained by selection among members of the group charged with making foreign policy" (348). The process works because "those individuals who have recommended successful policies in the past" tend to be selected in the future, and "the actions of the group appear more and more rational" (351). "Collective learning" occurs either at the individual level, as decision makers "acquire a better understanding of the environment", or as "they are replaced by other decision makers who already have" such understanding" (353).

"The evolution of international norms," particularly "the norm of transparency in international security" (363) is the concern of Anne Florini, from the Rockefeller Brothers Fund. Florini "draws an analogy between genes and norms". The analogy depends on similarities between genes and norms in "directing behavior", transmission by "inheritance", and selection by contest or "competition" (367). Such selection is "cumulative" and "nonteleological". As in the preceding models, selection is rational in the sense that there are progressive "adaptations to changing environmental conditions" (369). These changes are not all-or-none. There is a broad array of rewards, and there are multiple penalties falling short of actor extinction. International norms achieve "prominence" because they are actively promoted by "norm entrepreneurs" (374-375) or because of simple emulation. They are more easily accepted if they are "coherent" and tightly "linked" with the "web" or "lattice" of "other prevailing norms" (376-377). And they must also fit within the prevailing international environment, which includes the population of states and the distribution of power between them. Norm reproduction occurs within and between states. Norm diffusion is enhanced by rapid decision maker "turnover", decision "failure", and the emergence of new issue areas (378).

Developing "an evolutionary theory of long-term economic growth" is the focus of Geoffrey Hodgson from Cambridge University. In this theory, different types of disruptions to socioeconomic processes, like wars and revolutions, "help to provide economies with modernized institutions and a basis for enhanced economic growth" (391). Major disruptive events challenge the "stability of institutions and routines", "path dependency and growth trajectories", "inertia and habit". Such shocks provide incentives for "innovation and novelty", the creation of new solutions for new problems (395-402). The perspective of evolutionary economics also informs the work of Robert Gilpin from Princeton University. He suggests, in particular, that "during successive historical periods the fundamental requirements for corporate success and economic competitiveness change primarily in response to environmental change". "New needs and opportunities," he continues, "necessitate "either an adaptive or an innovative response".

Further, "organizational response to technological change and market opportunities is the key to economic success and the 'survival of the fittest' ". Gilpin extends the scope of this argument from the firm to the nation state, arguing that "some national economies are better able than others to take advantage of...evolving requirements for productive efficiency and international competitiveness" (412-413).

The collection of articles, taken as a whole, offers a creative and innovative application of contemporary evolutionary theory to international relations. It updates an earlier, simpler, Social Darwinist legacy and provides an opening into the flow of contemporary evolutionary discourse. Yet, a word of caution is also appropriate; we are still a long way from evolutionary international relations. Evolutionary concepts and models cannot simply be grafted onto a new subject field. In the first place, conceptual and empirical distinctions—for example, between organism and environment—are relatively clear in living systems, even though biology does have its own serious levels-of-analysis problems. Identities and boundaries tend to be more murky in international relations. For example, nation states often appear individually as units and collectively as the system. It is far from clear that either assumption is free from contest. There are no visible membranes or epidermal boundaries that surround nation states. There is also a related problem of circularity. If the units and the environment are reducible to the same identity, it is hard to know what to make of adaptation. In this case the adaptation of the units to the environment, of nation states to a system of nation states, looks a lot like a dog chasing its own tail. The highway between genes and memes, moreover, is difficult and precarious, under continuing construction.

In spite of such difficulties, the conceptual evolution of evolution into the realm of international studies provides a welcome pool of new enthymemes, epistemes, and mythemes for scholars of foreign affairs. It dramatically increases the memetic pool available for the construction of international theory. It offers some hope of rescuing international relations from the inbred stagnation of its Realist niche. It presents a bridge to other fields of study and dimensions of reality. It may even foreshadow the beginning of a more diverse and sophisticated post-Realist understanding of the highly complex and rapidly changing global dynamics of the emerging 21st century.

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