Published in final edited form as:

Globalizations. 2008 June 6; 5(2): 107–109. doi:10.1080/14747730802057431.

The Global Complexity Framework

SARA R. CURRAN

University of Washington, Seattle, WA, USA

Until recently, attempts to understand and then manage or influence global complexity and local dynamics have bumped up against a limited set of paradigms that can account for both. In turn, these paradigms have sometimes hindered our empirical observation by limiting our focus to one global system at a time or honing in on the dynamics of particular localities without comprehensively accounting for a variety of global systems. Nevertheless, a few paradigms provide generalized views on global complexity and local dynamics. This essay provides a brief overview of sociological approaches towards understanding global complexity. It is meant to provide a generalized background to the references or implied theoretical approaches found in many of the papers in this collection.

World systems theory provides an account of the global structure of interstate political economy relationships, by deductively predicting not only the web but the directionality of flows that define differential positions of power (e.g., Chase-Dunn, 1989; Wallerstein, 1974). Coupled with dependency theory (e.g., Cardoso & Faletto, 1979; Evans, 1979), a world systems theory approach offers explanations for cross-national differences in political and economic capacities and the persistence of internal, regional inequalities. Still useful today, these theoretical perspectives are limited in their capacity to describe the emergence of important nonstate actors transitional networks, and the dynamics of global structural change.

Based on world systems theory, a more recent approach to understanding globalization focuses on the commodity chain, especially industrial manufacturing (Gereffi, 1993). The approach describes how commodity chains extend and contract around the world and how chains can be more or less vertically integrated in response to global economic cycles. Much attention in this literature has focused on governance of the chain, key agents that control information and technology, the relationships between agents along the chain, and not only trade, but finance and investment relations. The illustrations resulting from global commodity chain approach have been powerful for describing the emergence and continued trend toward outsourcing and its implications for development outcomes, especially regarding textiles, some agricultural commodities, and automobile manufacturing. For our purposes, although many of the papers in this collection are loosely oriented toward a global commodity chain approach, their difference lies in focusing on the local disruptions and dramatic shifts in the shape of global commodity chains and the intersections of one

commodity chain with another or the multiple chains and pathways of one commodity. For these reasons, we find the global complexity framework more useful for illuminating global structures and local dynamics (Urry, 2003).

The global complexity approach builds on social network theory (e.g., Castells, 1996, or Held et al., 1999) by focusing on both nodes and the structure of relationships between nodes. A complexity theory approach draws attention to how agents or actors at any nodal point interacting with limited information can intentionally or unintentionally ignore the network's structural imperatives. This ignorance, compounded through iterative engagements, means that the system or social structure is always at risk of perturbations that may have very large reverberations for the web, even dismantling it. This yields the classic complexity metaphor used by ecologists to describe how a butterfly flapping its wings in one part of the world can result in a hurricane in another. Such an approach is counterintuitive to the structural imperatives assumed by global governance regimes, such as the WTO, or the social science paradigms of world systems theory or global commodity chains. Nevertheless, in this collection we find several examples of this complexity, especially as they relate to agricultural commodities and key agents' other forms of access to the global economy.

With a global complexity perspective, it is not enough to look at the macro governance structures, such as GATT, WTO, or other trade agreements. The institutions behind these governance mechanisms often presume control over the entire system. Nor is it enough to look at one commodity chain because it also relates to other commodities in terms of substitutability, additives or because the very nature of its travel creates connections to other systems of economic and political relations altering those systems or benefiting from them. Finally, a global complexity approach requires a simultaneous focus on localities. Institutions, conditions, and actors in localities are expected to introduce perturbations into global webs of exchange precisely because their actions are necessarily a result of limited, relatively localized information. These actors can never have full information and as such their interaction within a global structure is incomplete, resulting in nonlinear outcomes for both localities and global structures.

Our starting point for considering global governance and the interaction between food trade, development, and the environment begins, therefore, from a global complexity standpoint. The very nature of our research question for the special issue speaks to the heart of the global complexity approach, which declares that understanding globalization via complexity requires attention to both social and natural systems and the interactions between the two. Each of the cases that follow in Part 1 reveal the kinds of complex interactions between social and natural systems, indicating how challenging is the task of global governance regimes, especially when trying to do so to benefit social and environmental well being in particular localities. As such, a global complexity approach necessarily sets forth more equivocal conclusions about the good or bad of globalization.

Biography

Sara R. Curran is Associate Professor of International Studies and Public Affairs at the University of Washington, USA. She is a sociologist and demographer and serves as the Director of the Center for Global Studies and Chair of the International Studies Program at the University of Washington. She is currently completing *Shifting Boundaries, Transforming Lives: Globalization, Gender and Family Dynamics in Thailand* (Princeton University Press, forthcoming) and she recently edited *A Handbook for Social Science Field Research: Essays & Bibliographic Sources on Research Design and Methods* (Sage Publications, 2006).

References

- Cardoso, FH.; Faletto, E. *Dependency and Development in Latin America*. University of California Press; Berkeley, CA: 1979.
- Castells, M. *The Information Age: The Rise of the Network Society*. Blackwell; Oxford, UK: 1996.
- Chase-Dunn, C. *Global Formations: Structures of the World Economy*. Blackwell Press; Cambridge, MA: 1989.
- Evans, P. *Dependent Development: The Alliance of Multinational, State, and Local Capital in Brazil*. Princeton University Press; Princeton, NJ: 1979.
- Gereffi, G., editor. *Commodity Chains and Global Capitalism*. Praeger; Westport, CT: 1993.
- Held, D.; McGrew, A.; Goldblatt, D.; Perraton, J. *Global Transformations*. Polity Press; Cambridge, UK: 1999.
- Urry, J. *Global Complexity*. Polity Press; Cambridge, UK: 2003.
- Wallerstein, I. *The Modern World-System, Vol. 1: Capitalist Agriculture and the Origins of the European World-Economy in the Sixteenth Century*. Academic Press; New York: 1974.