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Should New Economic Thinking Be Incremental or Paradigmatic?

David Sloan Wilson

I welcome the opportunity to respond to this thoughtful article by Herbert Gintis, who was among the first to import modern evolutionary thinking into economics, and who was also one of my first mentors, as I will describe in more detail below. I feel most comfortable calling him Herb and hope that this will not be considered too informal. Herb and I agree that New Economic Thinking (NET) should be based on a combination of evolutionary and complexity theory, but we disagree on how to get there. Herb thinks that the path can be incremental "by trying to build on the success and correct the flaws of standard neoclassical economic theory." I think that the change requires more of an "out with the old, in with the new" approach.

Following Herb's example, I'll begin with a few autobiographical details. As someone trained in general evolutionary theory, I didn't begin thinking seriously about economic theory until about 10 years ago. When I did, however, I was able to educate myself in a big way as cofounder and president of the Evolution Institute, the first think tank to formulate public policy from an evolutionary perspective. A conference and series of workshops funded by the National Evolutionary Synthesis Center (NESCent) led to a 2013 special issue of the *Journal of Economic and Behavior Organization* (*JEBO*) titled "Evolution as a General Theoretical Framework for Economics and Public Policy" (Wilson and Gowdy 2013; Wilson, Gowdy, and Rosser 2013). A conference organized with Germany's Ernst Strungmann Forum led to a 2016 volume published by MIT Press titled *Complexity and Evolution: Toward a New Synthesis for Economics* (Wilson and Kirman 2016). My article with the ecological economist John Gowdy titled "Human Ultrasociality and the Invisible Hand: Foundational Developments in Evolutionary Science Alter a Foundational Concept in Economics" (Wilson and Gowdy 2014) uses one of the central metaphors of economics to argue for paradigmatic change. Finally, the Evolution Institute helped to start, and I am a frequent contributor to, the online magazine Evonomics.com, which reports "the next evolution of economics" to a general audience. Thus, as this point I am not a stranger to economic theory, and my perspective goes beyond my own views to include my role as an organizer of events and their published outputs.

My experience helping to organize the Ernst Strungmann Forum can help to locate where Herb stands with respect to his peers. The forum brought more than 40 experts together for a five-day period. All of them were at the forefront of NET, using complexity and/or evolution as their theoretical foundation; otherwise they would not have been invited. They were evenly split on the issue of whether NET can be incremental or needs to be paradigmatic. Feelings ran high on both sides. Tempers were lost during the heated discussions, especially when it came to writing the reports of the four working groups. Thus, important issues were/are at stake with the "incremental versus paradigmatic" distinction, at least in the minds of the participants.

Intriguingly, a similar dynamic is taking place in my field of evolutionary theory around

the phrase "Extended Evolutionary Synthesis," which is championed by some and disparaged by others (Laland et al. 2015). In this case the term was chosen to be judicious, merely claiming that a previous synthesis was being extended rather than replaced, but passions still run high!

A bit of complexity thinking might help to clarify the important issues at stake. Visual metaphors such as adaptive landscapes from evolutionary theory and basins of attraction from complex systems theory represent the concept of *multiple locally stable equilibria*. A dynamic system tends toward the nearest equilibrium, climbing a peak (for the adaptive landscape metaphor) or falling into a bowl (for the basins of attraction metaphor). The equilibrium is robust against small perturbations, and larger perturbations are required for the system to move to another equilibrium—down a valley to the slope of another peak for the adaptive landscape metaphor or up the side of the bowl to an adjacent bowl for the basin of attraction metaphor. If the local equilibrium is very stable, then the system cannot be moved and other equilibria can only be achieved by starting with another dynamic system.

Against this background, the "incremental" versus "paradigmatic" debate can be seen as a debate about the topography of intellectual change. Employing the adaptive landscape metaphor, the incrementalists are saying that NET is a matter of climbing the slope of an adaptive peak, which can be done in a stepwise fashion. The paradigmatics are saying that current economic thinking is stuck on a small peak surrounded by deep valleys on all sides. To reach a taller peak, it is necessary to start with a new configuration of ideas that is already on the slope of that peak. Before continuing, it is important to stress that these visual metaphors can break down in truly complex systems, which are more like wavescapes than landscapes, with the potential for peaks to turn into slopes and so on. In any case, the standard imagery can suffice for the purposes of this article.

Later I will describe why I am a paradigmatic, but Herb does much of the work for me in his own article. In fact, if one were to change Herb's introduction to argue that a clean break with the past is needed, the rest of his article would make more sense than with its current introduction! Here is a sample of failures of standard economic theory identified by Herb:

- It is only good at equilibrium analysis and "has no serious treatment of economic dynamics."
- Its modeling of human decision-making (the rational actor model, often described as *Homo economicus*) is deeply problematic.
- There is a massive disconnect between microeconomics and macroeconomics, and the latter is "a mess." Thus, Herb is only an incrementalist for microeconomics and a paradigmatic for macroeconomics.

To Herb's list of failures of standard economic theory, I will add my own.

(1) Standard economic theory has a faulty conception of theory derived from nineteenth-century physics. The idea that there can be a "physics of social behavior" with individuals as the "atoms" and that the theory can consist of a self-contained set of equations with a list of fundamental theorems is deeply problematic and doesn't even work for twenty-first-century physics, to say nothing of biological or human social systems. This faulty conception of theory is at the root of most of the other problems, such as the assumption of equilibrium and assumptions about human decision-making, which are forced upon the theory to keep the mathematics tractable.

(2) Privileging "mathiness" has crowded out other, more reasonable approaches to economic theory, including computer simulation models, such as the one that Herb describes in his article. Until recently, such methods were deemed inferior, not meriting publication in the elite journals and therefore not meriting tenure in Economics departments. In this, economics has recapitulated the history of complexity science, which had to overcome the arrogance of analytic mathematicians before it could develop with

a blend of modeling methods, including but not restricted to analytic mathematical models (Gleick 1987).

(3) Standard economic theory assumes that rational actors strive to maximize their absolute utilities, whereas evolutionary theory assumes that organisms evolve to maximize their relative fitness. This is highly consequential for the predictions of economic theory, as Robert Frank (2011) explains in his book *The Darwin Economy*. This is a good example of the absence of incremental change in standard economic theory. Why didn't economists realize the importance of relative fitness thinking long ago?

(4) Another example of the failure of standard economic theory to converge on foundational insights concerns the importance of norms enforced by punishment. This is central to cultural evolutionary theory but so absent from economic thinking that George Akerlof called it "The Missing Motivation of Macroeconomics" in his 2007 presidential address to the American Economics Association (Akerlof 2007). It is missing from microeconomics also because it violates the assumption of self-regarding preferences, which is hard to change because it would complicate the math.

(5) In his conclusion, Herb states that "standard economic theory has told us for more than half a century that there is no viable alternative for a high level of social welfare to a market economy regulated by a powerful state." Yet, the theory is overwhelmingly used around the world to diminish regulations and the power of the state, along with other sectors of the population, such as labor. It is disingenuous for Herb to attribute this to ignorance, as if it could be corrected if only everyone would read a book or two on economics for dummies. The Evolution Institute has made a special study of Norway as a case study of cultural evolution leading to a high quality of life at the national scale (Wilson and Hessen 2014). The form of governance that evolved in the Nordic countries during the twentieth century, alongside American-style capitalism and Soviet-style communism, was described as a "middle way" in a book that influenced Franklin D. Roosevelt's New Deal policies (Childs 1938). It involves a collaborative relationship between capital, labor, and the state, with each operating from a position of strength. Even though capitalism is an essential ingredient of the so-called Nordic Model, the model does not draw upon standard economic theory and is threatened by neoliberal policies influencing European Union policies, which does draw upon standard economic theory. I worry that Herb's rendering of what standard economic theory supports is at odds with what standard economic theory is used to support for reasons that go far beyond simple ignorance.

THE ALTERNATIVE PARADIGM

One should never criticize a paradigm without providing an alternative. Herb and I agree about evolutionary and complexity theory as the appropriate foundation for NET, so my task as a paradigmatic is to show how it is easier to simply start with evolutionary and complexity theory rather than to try to get there from standard economic theory.

(1) Evolutionary and complexity theory provides a superior conception of theory. Evolutionary theory does not take the form of a set of self-contained mathematical equations. Instead, it begins with a set of assumptions about the world that can be stated in words (variation, selection, and heritability) and then leads to empirically testable predictions about the properties of organisms. Analytical mathematical models play a role in evolutionary theory, but only in the relatively humble role of clarifying specific topics, such as population dynamics, population genetics, or optimal foraging behavior, always in conjunction with empirical tests. Likewise, the dynamics of physical systems hits a "complexity wall" very quickly (e.g., the three-body problem compared to the two-body problem for the dynamics of celestial bodies), which forces analytic mathematical models to play an important but much more humble role.

The appropriate conception of theory already exists for the study of evolution and complexity. Let's just abandon the "mathiness" of standard economic theory and move on.

(2) A central metaphor for economics that emerges from evolutionary theory is *society as an organism*, which has a long history in philosophical, biological, and social (including economic) thought but emphatically is not forthcoming from standard economic theory. My article with John Gowdy (Wilson and Gowdy 2014) develops this theme. The concept of society as an organism is not just a metaphor but is literally the case, at least when the necessary conditions are met, as delineated by Multilevel Selection (MLS) theory (Wilson 2015).

(3) Once we take the concept of society as an organism seriously, we can begin to draw upon the concept of biological regulation to think about how to regulate economic and other social processes. This will be far more fruitful than the concept of regulation that flows from standard economic theory.

(4) Once we take cultural evolution seriously, then we can see the fast-paced changes taking place all around us as evolution in warp drive. Since what counts as adaptive in the evolutionary sense of the word does not always correspond to normative societal goals, we can see pathologies as cultural evolution taking us where we don't want to go and policy as a way of wisely managing cultural evolutionary processes. This can provide a middle way between laissez-faire and centralized planning.

Speaking for myself, I get much more mileage *beginning* with evolutionary and complexity theory than *trying to get there* from standard economic theory. Either way, Herb and I agree about the destination.

WORKS CITED

Akerlof, G. A. 2007. "The Missing Motivation in Macroeconomics." *American Economics Review* 97:3–36. doi.org/10.1257/aer.97.1.5.

Childs, M. W. 1938. *Sweden: The Middle Way*. New Haven, CT: Yale University Press.

Frank, Robert. 2011. *The Darwin Economy: Liberty, Competition, and the Common Good*. Princeton, NJ: Princeton University Press.

Gleick, J. 1987. *Chaos: Making a New Science*. New York: Penguin.

Laland, Kevin N., Tobias Uller, Marcus W. Feldman, Kim Sterelny, Gerd B. Müller, Armin Moczek, Eva Jablonka, and John Odling-Smee. 2015. "The Extended Evolutionary Synthesis: Its Structure, Assumptions and Predictions." *Proceedings of the Royal Society of London B: Biological Sciences* 282. doi.org/http://dx.doi.org/10.1098/rspb.2015.1019.

Wilson, David S. 2015. *Does Altruism Exist? Culture, Genes, and the Welfare of Others*. New Haven, CT: Yale University Press.

Wilson, David S., and John M. Gowdy. 2013. "Evolution as a General Theoretical Framework for Economics and Public Policy." *Journal of Economic Behavior & Organization* 90:S3–S10. doi.org/10.1016/j.jebo.2012.12.008.

_____ 2014. "Human Ultrasociality and the Invisible Hand: Foundational Developments in Evolutionary Science Alter a Foundational Concept in Economics." *Journal of Bioeconomics* 17 (1): 37–52. doi.org/10.1007/s10818-014-9192-x.

Wilson, David S., John M. Gowdy, and J. Barkley Rosser, Jr. 2013. "Rethinking Economics from an Evolutionary Perspective." *Journal of Economic Behavior and Organization* 90:S1–S2. doi.org/10.1016/j.jebo.2013.05.004.

Wilson, David S., and Dag Olav Hessen. 2014. "Blueprint for the Global Village." Accessed September 4, 2014. https://evolution-institute.org/focus-article/blueprint-for-the-global-village/?source=sef.

Wilson, David S., and Alan Kirman, eds. 2016. *Complexity and Evolution: Toward a New Synthesis for Economics*. Cambridge, MA.: MIT Press.