BOOK REVIEWS

Disrupting Science: Social Movements, American Scientists, and the Politics of the Military, 1945-1975, by Kelly Moore. Princeton, NJ: Princeton University Press, 2008.

Disrupting Science is an important contribution, both empirically and theoretically, to what scholars have called the "new political sociology of science." Empirically, Moore provides carefully researched accounts of scientific activists who challenged the post-WWII alliance between science and the military. Theoretically, Moore adds both to social movement theory and science and technology studies. She argues that interest-based accounts of scientific professions cannot account for the oppositional work of scientific activists. Likewise, she suggests that traditional social movement theory fails to provide a full explanation for scientific activists, who were motivated by moral values, symbolism and ideology to engage in actions that weakened their own cultural authority.

At the core of the book are historical case studies of three scientific activist organizations: the Society for Social Responsibility in Science (SSRS), the Committee for Nuclear Information (CNI), and Scientists and Engineers for Social and Political Action, known colloquially as Science for the People (SftP). Moore argues that each organization represents a different ideal type of scientific activism. The SSRS, which was founded by Quakers and had strong pacifist leanings, represents the position of "moral individualism." The CNI's approach was an instantiation of "liberalism." Liberal scientific activists, argues Moore, believed that scientists were obligated to provide citizens with the information they needed to make rational political decisions. SftP represented a "radical" approach that not only condemned the relationship between science and the military, but also questioned the very principle of value-free science. For her evidence, Moore draws heavily on rich collections of archival documents and oral histories, in addition to published sources.

Moore uses her three case studies to make an original argument about the postwar transformation of the cultural authority of science. She argues that scientific activists, by challenging the military-science relationship, helped undermine the authority of science. More precisely, she claims that scientific activism weakened the cultural authority of scientists more than science, in part by questioning the role of scientists as the sole arbiters of scientific knowledge. This questioning helped legitimate the role of other social groups and actors in evaluating scientific claims. Other scholars have advanced similar arguments, most notably Brian Balogh and Stephen Hilgartner, whose

poverty across national and historical contexts and an excellent critique of contemporary social science research on poverty. I plan to use this book with undergraduate students in my poverty and policy seminar who are deeply interested in understanding why poverty persists in the United States and what poverty looks like in other wealthy nations.

Jacqueline Olvera
Barnard College, New York

The International Structure of Income: Its Implications for Economic Growth, by Savatore Babones, Saarbrucken, Germany: VDM Verlag Dr. Muller, 2009. 179 pp.

In a work based on his dissertation, Babones sets out to integrate the contributions of sociological and economics literature to better understand the nature of economic growth in the world-economy. By combining economic growth models with dependency theoretical contributions, Babones challenges some of the fundamental assumptions of economic theory regarding growth in the world-economy.

He begins the work by attempting to answer the question of whether there is convergence in the world-economy. After converting currencies into measures that are more comparable over time, he concludes that attempting to resolve the convergence debate based on national comparisons leads to inclusive results and may be the wrong approach to take. For Babones, the more important question is how income is distributed globally. Population growth rates and the effect of nations like China cause problems for the interpretation of the results at the nation-state level. Babones uses the example of growth rates in Guatemala to illustrate his point. Because Guatemala is just above the global mean in average income, "growth rates [in Guatemala] higher than the global mean ... would make the world more unequal" (31).

Because of these anomalies, Babones analyzes the distribution of income globally. Using national income distributions, he constructs a global income distribution. The distributions of global income display a bimodal distribution in all four time frames Babones analyzed. According to Babones, the absolute distribution of income in the world-economy is clearly becoming more inequitable. The poor are getting slightly wealthier, but the rich are becoming much richer. While Babones argues that economics theory or income distribution theory is unable to explain the bimodal distribution, he points to Giovanni Arrighi and Jessica Drangel ("The Stratification of the World-Economy: An Exploration of the Semiperipheral Zone." 1986 *Review* 10:9-74) to explain the distribution into two distinct populations. Babones argues that "core-like activities" and "periphery activities" (60-1) could explain the division of world incomes into two distinct groups. This argument is also consistent with Immanuel Wallerstein who describes core and periphery

activities that precede Arrighi and Drangel's formulations (see for example Wallerstein in Terence Hopkins and Immanuel Wallerstein *World-Systems Analysis: Theory and Methodology* 1982:93).

The next issue tackled by Babones' text attempts to identify the three zones of the world-economy. Babones outlines a number of theoretical traditions before modifying the income tradition to produce a data set with a smoother distribution. According to Babones, he finds three distinct zones in the world-economy, consistent with previous world-systems theoretical formulations. However, the semiperiphery is much smaller than the core. Babones explains the fewer semiperiphery nations occurs because of the "hard boundaries" at the top and bottom of the distribution of nations (97). Nations in the semiperiphery can migrate up and down, but nations in the core can only migrate in one direction.

Babones' results tend to contrast with Wallerstein's operationalization. What is important about Wallerstein's (*The Capitalist World-Economy* 1979:100) listing of semiperipheral nations is not so much what nations are included, but what nations would be left to form the core. More in line with the "power law" distribution of "aristocratic networks" (Mark Buchanan *Nexus: Small Worlds and the Groundbreaking Science of Networks* 2002: 83, 119), there are only five nations (United States, Japan, Germany, France and the United Kingdom) that would fall into the core based on those Wallerstein placed in the semiperiphery. This operationalization of the core would pose problems for statistical analysis due to the small number of cases. While Babones argues that the nations included in the semiperiphery have face validity (97-8), the distribution of nations tends to run counter to what is expected in an aristocratic or hierarchal network. The network should assume a more loglinear pattern with few at the top, more in the middle and the vast majority at the bottom. Wallerstein's operationalization and a hierarchal network conflicts with where Babones and others place nations in the world-economy. Babones' book and the contemporary cross-national world-economy research do not currently address this inconsistency. Future research may need to probe the bimodal distribution of global income, the apparent trimodal distribution of national income, and the fact that hierarchal networks tend to follow a loglinear pattern.

The next two chapters of Babones' book tackles the neoclassical model of growth in the world-economy. In chapter 5, he uses the neoclassical model of economics as a base for integrating theoretical issues from world-systems literature. Instead of measuring simple capital investment, Babones distinguishes between domestic and foreign investment to identify if foreign investment provides any significant boost to economic growth. The results of this section tend to confirm some of the neoclassical arguments, but also challenge some of the previous neoclassical literature. Beginning with the basic model, it does appear that "poor countries would tend to grow faster than rich countries if they had equal levels of the three neoclassical inputs" (130). When it comes to working age population and education, Babones

finds an interesting interaction between the two variables. According to Babones, the effect of education may be the result of the percentage of the working age population. When studies leave out a variable indicating working age population, it may overstate the effect of education on economic growth. When looking at the differences between zones of the world-economy, the results vary by time frame, but the working age population tends to be the most significant predictor in all three zones. At times, capital is predictive in the core and periphery, but not in the semi-periphery. When breaking out domestic from foreign investment, the results find significant results for domestic investment, but foreign investment is only significant in the population weighted model. Babones concludes that the results may suggest investment follows growth, not the other way around as suggested by neoclassical theory. His next chapter attempts to answer this question.

Babones designs a reciprocal effects model to test the direction of relationship between investment and growth. In addition to the variables already included, Babones adds the amount of domestic financial credit as a measure of financial development and a measure of trade indicated by imports plus exports divided by GDP percapita. Babones' results tended to demonstrate that growth leads to greater investment, but investment does not lead to more growth. On the question of investment leading to economic growth, the coefficients were negative, although non-significant, in the periphery. These results, according to Babones run counter to the neoclassical literature on the subject. Investment does not stimulate growth, and in the periphery, although non-significant, tends to suggest that it reduces growth.

In general, Babones' text provides some interesting methodological techniques and challenges neoclassical growth theory while using their own models. Overall, it is a unique contribution in a growing field of cross-national world-economy studies. One drawback is that Babones' study requires that the reader has a relatively sophisticated methodological understanding. For example, regression tables include t-statistics that require interpretation by the reader, and it is unclear whether the coefficients are unstandardized. For those who conduct cross-national research, his methodological approach provides researchers with alternative solutions to data issues, such as techniques for converting currencies and global income distributions. While I think there are still theoretical advances to be made in the area of cross-national world-economy research, Babones provides a unique methodological analysis of the longstanding question of global inequality.

Paul Prew
Minnesota State University, Mankato