



## IN MEMORIAM: THE CONTRIBUTIONS OF R. SCOTT FREY

### R. Scott Frey and the Unfinished Agenda of Unifying Economy and Environment in the World-System from Extraction to Waste

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#### Abstract

*This essay discusses Scott Frey's contributions to our understanding of what he called environmental 'anti-wealth,' including his analysis of how it is spread to the peripheries of the world-system, and how Frey's work intersects with other research, including the author's own, on the ongoing extraction of value from peripheries. In addition to noting Scott's generosity as a scholar and mentor, Gellert reflects on Scott's unfinished agenda research agenda, focused on unifying commodification and waste in the world-system.*

**Keywords:** Political economy, Environment, Extraction and waste, Inequality, Peripherality

#### A Wintertime Greeting and the Growth of Political Economy and Environment in Tennessee

My memories of Scott begin one snowy night in February 2005 (even if I had met him at a professional meeting before then). He stood in a classic khaki trench coat at Knoxville airport as I emerged from the long flight from Tokyo to Knoxville to interview for a position in the department of Sociology at the University of Tennessee. Scott quietly greeted me and escorted me to the hotel, and the rest, as the cliché goes, is history. The interview worked out well, and I joined the department in August 2005, helping to build one of the handful of sociology departments in the



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country that boasts multiple faculty focused on environment. In addition, we became one of the fewer departments with more than one faculty member focused on the political economy and political *ecology* of the world-system.

Throughout my time at the University of Tennessee, Scott was a steadfast supporter of political economy of the environment research. He was also a dedicated mentor of graduate students who provided personal care, including inviting many foreign graduate students to Thanksgiving dinners in his home and leading one to ask, “How do you heal yourself from the sudden passing of your mentor?”<sup>1</sup> In truth, Scott's manner could not have been more different from mine, and his sense of humor could not have been drier than my New York expressive, talkative and joking ways. Yet somehow, our combination worked well. From 2014 through August 2018, we worked closely together (also with Harry Dahms) to finish a special issue of JWSR and a co-edited book emerging from a conference on ecologically unequal exchange that we hosted in Knoxville.<sup>2</sup>

These last works built on Scott's longstanding interest in the unequal trail of waste from the richer to the poorer parts of the world. In this brief reflection essay, I review Scott's contributions to our understanding of what Scott called environmental ‘anti-wealth’ that is spread to the peripheries of the world-system and how these intersect with other work, including my own, on the ongoing extraction of value from peripheries. More than once along the way from my job interview to the conference to the book production he reminded me how much he admired the work of my PhD mentor, Stephen Bunker, and we both happily republished some of this early and influential environmental sociology in the book (Frey, Gellert, and Dahms 2019; Bunker 1985). I conclude with reflections on Scott's unfinished agenda research agenda focused on unifying commodification and waste in the world-system.

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<sup>1</sup> Nikhil Deb, whose dissertation I now chair, was kind enough to share his Facebook posting with me (because I am not on Facebook) and grant permission to use it here. Paul Ciccantell shared the memory of Thanksgiving meals with Scott when they were both at Kansas University in Manhattan, Kansas. Nikhil's posting continued, “Frey has been an indefatigable source of encouragement to me. He helped me develop my research ideas, form my professional behavior, and show the right path at the times of dubiety. His professionalism never ceased amazing me. He treated me with sincere regards. The average time he took to reply my email was less than three minutes. And we met at least once in a week or two for last three years to post him my progress. ... I will cherish the memory I have of him. His modesty. His humor. His humility.”

<sup>2</sup> The conference was a great success, and I can only imagine that the parties would have been even more jovial if the university allowed alcohol because surely Scott would have chosen an excellent wine for the closing dinner. He was the lead organizer of the conference and the lead editor of the products of this collaboration. Frequently he added a dry joke or two along the way -- even as we were intellectually working to address some of the most serious issues of inequality and environmental degradation that the world is facing. More generally, Scott was a very unassuming man, and many still may be unaware of his intellectual contributions.

### **Building the Links between World-systems, Inequality and Peripherality**

Scott's patient attention to the empirical evidence on the triple risks of the world system to the health, safety and environment of the peripheries, especially, led to the accretion of knowledge about multiple commodities. Through a series of papers, Scott built up the sediments of a unified understanding of human uses, abuses and suffering in the form of risks. In an early step, he identified the health, environmental, and social costs of tobacco. As health concerns and anti-smoking movements led to declines in consumption in the core, Scott affirmed predictions of increasing mortality in the periphery, especially in highly populous countries such as India and China (Frey 1997). Such trends have been borne out in the subsequent two decades and importantly are not simply the result of market forces. Indeed, Scott de-naturalized the legal market forces by examining tobacco as a commodity that is 'trafficked' via pressures to open developing country markets and false and misleading advertising in less regulated spaces.

From tobacco, he moved to the transfer of hazardous production from the U.S. core to the *maquiladora* zone along the Mexican border. Others had illuminated the de-industrialization of the core U.S. economy and the transfer of production to locations in Latin America and Asia due to the provision of cheap, docile, often female, and weakly organized labor (e.g., Gereffi and Korzeniewicz 1994; Deyo 1989). Accompanying the labor 'race to the bottom,' Scott pointed out that, "TNC export practices are increasing the health, safety, and environmental risks facing many peripheral countries" (Frey 2003: 317). Moreover, after cataloging the extent to which the health, safety, and environmental risks to Mexicans emanated from largely foreign-owned factories, he quietly insisted on critiquing the idea, per neo-liberal and 'sophisticated' eco-modernization writings, that such practices were "beneficial (sic) to both the core and the periphery" (Frey 2003: 319).

Scott also exposed the environmental underbelly of e-waste and of war. On the former, up to 50 million tons per year of intentionally obsolescent and discarded computers, cellphones, televisions, and other "byproduct[s] of the information and communication technology" (Frey 2012b: 81) undergirds contemporary global profits and what Schnaiberg (1980) identified as the treadmill of production. The dismantling and re-purposing (and recycling, ironically) of parts from these commodities exposes mainly peripheral workers and importantly also their local and regional waterways and soils to toxins. On war, Scott (Frey 2013) was one of few sociologists to draw the links between the U.S. war in Vietnam and the "toxic violence" (Bonds 2013) of Agent Orange.

### **An Unfinished Agenda: Uniting Waste with Production and Extraction**

As attention to the series of waste streams attest, Scott worked throughout his career at the opposite end of the world-system from most. In his earliest writings, he had focused on risk, and that was a theme that he returned to in a variety of ways in the later papers. In a nutshell, his work

focused on the environmental ‘bads’ of the production of economic ‘goods’ or commodities in the world-system. Many others have focused attention on extraction of resources and the transformation of socionatural landscapes that extraction entails (Ciccantell and Patten 2016; Gudynas 2010; Kaup 2013; Longo et al. 2015; Marley 2016). In such work, it is vital to understand how systemic structures shape decisions made in the logic of capital accumulation, which degrade nonhuman nature and undermine human livelihoods while creating wealth for a small sliver of the population (Gellert 2005, 2010). Such decisions occur under what is understood as neoliberalism in investment houses in the core of the world-system and also regional centers of capital such as Singapore for Asia, but they are also made by politico-bureaucrats and military elites in states often dubbed ‘developmental,’ or in world-systems terms, semi-peripheral or peripheral (Kaup 2015; Gellert 2019). Scott’s insights into the spread of toxics to a frequently acquiescent periphery address this as well.

There are hints, in fact, in his late works of beginning to try to put everything together, from extraction to production to transport to waste. In effect he was attempting to pursue the integrative aims that Ciccantell and Smith (2009) and Sowers et al. (2014) also have addressed in ‘lengthening’ the analysis of global commodity chains but in Scott’s case all the way through to waste. Recognizing that much literature has focused on the expansion of the world-system to and through new frontiers (Bunker 1985; Dunaway 1996; Longo et al. 2018; Moore 2015), Scott asked us to pay closer attention to the “displacement of the core’s anti-wealth to the ‘waste disposal frontiers’” (Frey 2015: 41). With Matthew Sanderson (Sanderson and Frey 2015a, 2015b), Scott examined how the continuous expansion of agriculture production depleted the High Plains Aquifer in Kansas, amounting to “water and wealth flow[ing] out of the region in a reinforcing process” (2015b: 528). This loss is precisely the ecological element of unequal exchange that Bunker examined and that Scott proposed scholars continue to pursue at the Knoxville conference on ecologically unequal exchange. It also addressed his point that, “Ecological unequal exchange is not confined solely to the core-periphery relations in the world-system but includes relations within nations and regions of the world-system” (Frey 2015:26).

To be sure, Scott’s empirical bent meant that he did not have as much patience or interest in the debates on ontology and epistemology that have preoccupied me in recent years (Gellert 2019). Still, he privately told me that he appreciated the way I navigated the terrain between the dialectics of Foster’s metabolic rift and the ontology of Moore’s world-ecology in support of Bunker’s mode of extraction and concern with indigenous insight into more sustainably living with(in) the earth. In his most theoretical contribution, Scott proposed that we think of the spread of environmental ‘bads’ as ‘anti-wealth.’ Most of the extant references to the term anti-wealth refer to ethical discussions of capitalism and also to normative debates about whether socialists and other leftists are anti- or *against* wealth. But Scott had something else in mind. As he (Frey 2012b: 80) wrote:

The core displaces anti-wealth (entropy broadly defined) or appropriates carrying capacity or waste assimilation by transporting it to the global sinks or to the sinks of the periphery in the form of hazardous exports. In other words, global sinks and the peripheral zones of the world-system are essentially ‘waste-disposal frontiers.’ Here Scott opposed those who continue to harbor more technophilic positions about the reformability of capitalism and the possible ecological modernization that could occur even in our most capital-intensive and profit or surplus-producing industries such as IT (e.g. Mol, Sonnenfeld, and Spaargaren 2009; for a critique see Ewing 2017; but also Smith, Sonnenfeld, and Pellow 2006). Instead, he implicitly pushed further the energetics analysis that Bunker (1985) had advanced. Moreover, he followed Pellow (2007) in arguing that global production is symbiotic with computer technologies and that such technologies are lubricating the movement of wealth to the core and anti-wealth to the periphery. He (Frey 2012b: 81) continued:

It is the computer in conjunction with the internet (and the global transport system) that facilitates the transport of wealth to the core and anti-wealth to the periphery, whether it is the movement of bauxite and iron ore from Brazil by large ocean going vessels (Bunker & Ciccantell, 2005) or the recycling, incineration, and/or disposal of e-waste in China. In examining ship-breaking, Scott directly linked these increasingly large vessels that facilitate the transport of raw materials to the shipbreaking centers of India and Bangladesh. In doing so, he recognized that neoliberalism has spread to such a degree that these two (semi)peripheries compete for the health and environmental risks associated with this work.

Our volume on ecologically unequal exchange brought together many scholars in this area to try to push forward this research agenda. We never had the opportunity, however, to conduct a joint research project that might tie together all the segments of commodity chains. Such a project might have combined material flow analysis with world-systems in a way that critically examined the ebbs and flows of the world-system as a whole. Scott was working on a book tentatively entitled *Globalization, Environmental Health, and Social Justice* about “how and why core-based hazardous products, production processes, and wastes are displaced to the peripheral zones of the world-system. These export practices not only damage the environment, but they have adverse health, safety, and socio-economic consequences for peripheral countries. Attention is also directed to how valuation discourses on development (especially economic language) are used to justify these practices.”<sup>3</sup>

As he compiled reams of data on the anti-wealth being spread in nodes of the periphery, Scott conveyed an enigmatic combination of overwhelming cynicism and pessimism about the enduring

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<sup>3</sup> In his CV, he lists the book as under contract. He also was a semi-finalist for a Fulbright fellowship awaiting selection from the Cambodian committee to conduct research on pesticide use and effects in Cambodian agriculture.

structure of the world-system – with hints of hope. At the 2015 conference on Ecologically Unequal Exchange, one thematic of our final discussions was whether different scholars were ‘optimistic’ or ‘pessimistic.’ Those who hewed closely to the distressing series of environmental indicators tended towards the pessimistic (e.g. Jorgenson; see also Foster et al. 2010). Others, such as Moore, who have worried about the apocalyptic tendencies of concerns about humans’ impacts on the environment, encouraged creative thinking about constructing new post-capitalist relations of humans with(in) ecologies (see also Lohmann 2014). Scott’s inclination was to follow the former group, while I rejected the premise of scholars needing to be either (Gellert 2019: 134, 136). Yet, I recall that it was Scott who inserted the reference to Magdoff and his idea of constructing a future ‘ecological civilization’ into our introduction to the special issue resulting from this conference (Gellert, Frey and Dahms 2017). Magdoff’s ecological civilization is one that “exists in harmony with natural systems—instead of trying to overwhelm and dominate nature” (Magdoff 2011: np).

In sum, Scott has left behind an unfinished agenda of unifying economy and environment into our analyses of the world-system from extraction to waste. Such research would conjoin an analysis of the relations of extraction of various commodities for producing and accumulating wealth in the capitalist world-system with the relations of waste that displace and externalize the ‘anti-wealth’ onto the weakest regions and most vulnerable peoples in the world.

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### References

- Bonds, Eric. 2013. “Hegemony and Humanitarian Norms: The U.S. Legitimation of Toxic Violence.” *Journal of World-Systems Research* 19(1):82-106
- Bunker, Stephen G. 1985. *Underdeveloping the Amazon: Extraction, Unequal Exchange, and the Failure of the Modern State*. Chicago, IL: University of Chicago Press.
- Bunker, Stephen G. and Ciccantell Paul S. 2005. *Globalization and the Race for Resources*. Baltimore, MD: The Johns Hopkins University Press.
- Ciccantell, Paul S. and Daniel Patten. 2016. “The New Extractivism, Raw Materialism, and 21st Century Mining in Latin America.” Pp. 45-62 in *Mining in Latin America: Critical*

- Approaches to the 'New Extractivism'*, edited by K. Deonandan and M. Dougherty. Abingdon, UK: Routledge.
- Ciccantell, Paul and David A. Smith. 2009. "Rethinking Global Commodity Chains: Integrating Extraction, Transport, and Manufacturing." *International Journal of Comparative Sociology* 50(3-4): 361-84.
- Clapp, Jennifer. 2001. *Toxic Exports: The Transfer of Hazardous Wastes from Rich to Poor Countries*. Ithaca, NY: Cornell University Press
- Deyo, Frederic C. 1989. *Beneath the Miracle: Labor Subordination in the New Asian Industrialism*. Berkeley, CA: University of California Press.
- Ewing, Jeffrey A. 2017. "Hollow Ecology: Ecological Modernization Theory and the Death of Nature." *Journal of World-Systems Research* 23(1):126-55.
- Foster, John Bellamy, Brett Clark and Richard York. 2010. *The Ecological Rift: Capitalism's War on the Earth*. New York, NY: Monthly Review Press.
- Frey, R. Scott. 1997. "The International Traffic in Tobacco." *Third World Quarterly* 18(2): 303-19.
- \_\_\_\_\_. 2003. "The Transfer of Core-Based Hazardous Production Processes to the Export Processing Zones of the Periphery: The Maquiladora Centers of Northern Mexico." *Journal of World-Systems Research* 9(2): 317-354.
- \_\_\_\_\_. 2012a. "The Displacement of Hazardous Products, Production Processes, and Wastes in the World-System." Pp. 440-42 in *The Handbook of World-Systems Analysis: Theory and Research*, S. J. Babones and C. Chase-Dunn, eds. New York, NY: Routledge.
- \_\_\_\_\_. 2012b. "The E-Waste Stream in the World-System." *Journal of Globalization Studies* 3(1): 79-94.
- \_\_\_\_\_. 2013. "Agent Orange and America at War in Vietnam and Southeast Asia." *Human Ecology Review* 20(1): 1-10.
- \_\_\_\_\_. 2015. "Breaking Ships in the World-System: An Analysis of Two Ship Breaking Capitals, Alang-Sosiya, India and Chittagong, Bangladesh." *Journal of World-Systems Research* 21(1): 25-49.
- Frey, R. Scott, Paul K. Gellert and Harry F. Dahms, eds. 2019. *Ecologically Unequal Exchange: Environmental Injustice in Comparative and Historical Perspective*. London, UK: Palgrave Macmillan.
- Gellert, Paul K. 2005. "Oligarchy in the Timber Markets of Indonesia: From Apkindo to Ibra to the Future of the Forests." Pp. 145-61 in *The Politics and Economics of Indonesia's Natural Resources, Indonesia Update Series*, B. P. Resosudarmo, ed. Singapore: The Institute of Southeast Asian Studies, in collaboration with the Australian National University.
- \_\_\_\_\_. 2010. "Extractive Regimes: Toward a Better Understanding of Indonesian

- Development.” *Rural Sociology* 75(1): 28-57.
- \_\_\_\_\_. 2019. “Bunker’s Ecologically Unequal Exchange, Foster’s Metabolic Rift, and Moore’s World-Ecology: Distinctions With or Without a Difference?” Pp. 107-40 in *Ecologically Unequal Exchange: Environmental Injustice in Comparative and Historical Perspective*, Edited by Scott Frey, Paul K. Gellert, and Harry F. Dahms. London, UK: Palgrave Macmillan.
- Gellert, Paul K., R. Scott Frey, and Harry F. Dahms. 2017. “Introduction to Ecologically Unequal Exchange in Comparative Perspective.” *Journal of World-Systems Research* 23(2): 226-35.
- Gereffi, Gary, and Miguel Korzeniewicz, eds. 1994. *Commodity Chains and Global Capitalism*. Westport, CT: Praeger.
- Gudynas, Eduardo. 2010. “The New Extractivism of the 21st Century: Ten Urgent Theses About Extractivism in Relation to Current South American Progressivism.” Americas Program Report (Washington, DC: Center for International Policy, January 21, 2010).
- Kaup, Brent Z. 2013. *Market Justice: Political Economic Struggle in Bolivia*. New York, NY: Cambridge University Press.
- \_\_\_\_\_. 2015. “Reiterated Problem Solving in Neoliberal and Counter-Neoliberal Shifts: The Case of Bolivia’s Hydrocarbon Sector.” *Theory and Society* 44(5): 445-70.
- Lohmann, Larry. 2014. “Fetishisms of Apocalypse” in *The Corner House*; available at <http://www.thecornerhouse.org.uk/resource/fetishisms-apocalypse/> (accessed March 13, 2019).
- Longo, Stefano B., Rebecca Clausen and Brett Clark. 2015. *The Tragedy of the Commodity: Oceans, Fisheries, and Aquaculture*. Rutgers, NJ: Rutgers University Press.
- Magdoff, Fred. 2011. “Ecological Civilization.” *Monthly Review*. At: <https://monthlyreview.org/2011/01/01/ecological-civilization/> (accessed March 13, 2019).
- Marley, Benjamin J. 2016. “The Coal Crisis in Appalachia: Agrarian Transformation, Commodity Frontiers and the Geographies of Capital.” *Journal of Agrarian Change*. 16(2): 225-254.
- Mol, Arthur P. J., David A. Sonnenfeld and Gert Spaargaren, eds. 2009. *The Ecological Modernization Reader: Environmental Reform in Theory and in Practice*. London, UK: Routledge.
- Pellow, David N. 2007. *Resisting Global Toxics: Transnational Movements for Environmental Justice*. Cambridge, MA: MIT Press.
- Sanderson, Matthew R. and R. Scott Frey. 2015a. “Structural Impediments to Sustainable Groundwater Management in the High Plains Aquifer of Western Kansas.” *Agriculture and Human Values* 32(3): 401-17.

\_\_\_\_\_. 2015b. "From Desert to Breadbasket...To Desert Again? A Metabolic Rift in the High Plains Aquifer." *Journal of Political Ecology* 21: 516-32.

Schnaiberg, Allan. 1980. *The Environment: From Surplus to Scarcity*. New York, NY: Oxford University Press.

Smith, Ted, David A. Sonnenfeld and David N. Pellow, eds. 2006. *Challenging the Chip: Labor Rights and Environmental Justice in the Global Electronics Industry*. Philadelphia, PA: Temple University Press.

Sowers, Elizabeth, Paul S. Ciccantell, and David A. Smith. 2014. "Comparing Critical Capitalist Commodity Chains in the Early Twenty-First Century: Opportunities for and Constraints on Labor and Political Movements." *Journal of World-Systems Research* 20(1): 112-39.