

## Ecological Modernization and Consumption: A Reply

ARTHUR P. J. MOL  
GERT SPAARGAREN

Department of Social Sciences  
Wageningen University,  
Wageningen, The Netherlands

*This contribution balances Carolan's claim that ecological modernization perspectives fall short in adequately dealing with consumption, by referring to four major points. First, Carolan misinterprets ecological modernization where he claims that this perspective only argues for more production (and consumption). Second, Carolan is wrong in stating that ecological modernization has basically neglected issues of consumption as it has been part and parcel of the theory for some time. Third, he is incoherent with respect to the issue of downsizing consumption in a demodernization way. Finally, the approach taken by Carolan to debate the environmental dimensions of consumption brings us back to Malthusian debates of the 1970s, instead of moving forward to a more sociological theory and perspective of sustainable consumption.*

In his article “Ecological Modernization: What About Consumption?” Michael Carolan argues that the emerging ecological modernization school of thought deals inadequately with issues of consumption. Many of his arguments are not unique and resound in other publications as well (e.g., During 1992; recently Princen, Maniates, and Conca 2002). As we read the criticism, the inadequacy of ecological modernization ideas with respect to consumption is believed to be as follows:

1. Ecological modernization is preoccupied with production and only asks for more production as a strategy for solving the environmental crisis.
2. Ecological modernization hardly pays conceptual and empirical attention to consumption.
3. If ecological modernization pays attention to consumption, it neglects questions of overconsumption and is too optimistic about the capacities of consumers as knowledgeable agents.

### **Beyond Malthusianism: The Irrelevance of “More” or “Less”**

In the debates on ecological modernization assumptions and arguments, one of the most persistent misunderstandings consists of the claim that ecological modernization

Received and accepted 6 August 2003.

Address correspondence to Arthur P. J. Mol, Environmental Policy Group, Wageningen University, Hollandseweg 1, 6706 KN Wageningen, the Netherlands. E-mail: arthur.mol@wur.nl

is asking for more production in order to lead us out of the environmental crisis. In his article, Carolan not only repeats this misreading but subsequently makes it into one of his central critiques. However, among the core tenets of ecological modernization theory there has never been a call for *more* production.<sup>1</sup> Closest to this claim comes the ecological modernization idea that an unqualified plea to limit the growth of production and consumption as the only “real” answer to the ecological crisis tends to miss the point. The question of more or less production and consumption is the wrong question, as far as ecological modernization scholars are concerned. The focal point should be on the environmental dimensions and performance of production processes, the goods and services they generate and the consumption practices they help constitute, and this performance cannot be sufficiently understood or addressed by taking into account only or primarily the (physical and economic) quantities involved.

Ecological modernization focuses on the changing character of production and consumption, as they tend to become organized not only with the use of economic criteria of quantity, but also and equally so using ecological criteria of quality. According to ecological modernization scholars, this reorganization can only be realized by moving further into the modernization process and when making use of modern institutions like markets and democratic pluralism—hence ecological modernization. Modern technology and industry can indeed be very helpful in this respect, but nowhere in the ecological modernization literature is the emphasis on the important roles for industry and technology stated or reformulated in terms of a claim for more production and more industry, nor cast in the rather obfuscating terminology of “more-as-different” as used by Carolan. At various places selective contraction (e.g., of nuclear industry, of pesticides production, of fossil fuel production) and shifts to other products and social practices (the use of public transport instead of private cars) are argued for, in order to stay within sustainability boundaries. In that sense, the objective of eco-efficiency is never an eco-efficiency as such or in itself. It does not make much sense to argue for production (nuclear technology) or products (sport utility vehicles, SUVs) just to be eco-efficient. Eco-efficiency, factor 4 or 10, closing loops, energy extensivisation, and many similar strategies are part and parcel of a more encompassing program to organize modern production and consumption within sustainability boundaries, no matter how difficult it might turn out to be to identify these boundaries in an undisputed way.

The second problem in Carolan’s arguments against more production is his use of natural science “empirical facts” and mathematical projections. While the author himself points to the need to be cautious when using natural science empirical projections to criticize social theories, he nevertheless takes a limited amount of specific facts, adds a number of hypotheses and arbitrary projections to them, and uses this procedure to prove that we will have too much production and consumption in the future. Hence, the question of how much is enough (or ecologically possible), becomes essential (again). However, anyone familiar with standing debates in the environmental field (from the classic debates of Simon vs. Ehrlich up to the present dispute between Lomborg and some IPCC experts) knows that such empirical arguments can easily be contrasted with countervailing “evidence” proving just the opposite. This use of “isolated” facts and argument does not move us forward. Of course, social theories need to be confronted with empirical evidence and counterevidence, but then in an appropriate and sophisticated way and not by mentioning a few facts and extrapolating these in a Malthusian way.<sup>2</sup>

## **The History of Ecological Modernization and Consumption**

When initial notions of ecological modernization developed into a more coherent set of ideas in the late 1980s, attention was paid primarily to the sphere of production. As Carolan mentions correctly, this is not so much an exception for ecological modernization but rather the rule for most social theories on the environment. While we very much welcome Carolan's plea for further attention to empirical research on and conceptual development of consumption and environment, also within an ecological modernization perspective, we do not—in 2003—consider his claim to be very timely. From the late 1980s onward we have referred to the emerging perspective of ecological modernization as a theory of production *and* consumption: “Ecological modernization can be interpreted as the ecological restructuring of processes of production and consumption” (Spaargaren and Mol 1992, 334–335). While the preoccupation has been on production in the 1980s and early 1990s, we have always claimed that the sphere of consumption should not be left untouched. In the introduction to the volume *Ecological Modernization around the World*, Mol and Sonnenfeld (2000, 5) reviewed the history of the ecological modernization literature up till then, concluding among other things that since the mid-1990s ecological modernization studies have widened their “productivist” scope, in order to include consumption.

Indeed, from the mid-1990s we see major developments in the conceptual and empirical development of sustainable consumption within the ecological modernization school of thought. Carolan himself refers to Spaargaren's theory of consumption as one example, which has been elaborated from 1995 onward by him and several collaborators. But there are other authors as well who developed the issue of consumption from an ecological modernization perspective.<sup>3</sup> Due to a certain division of labor (as is the case with the two of us), academic preferences, departmental traditions, or other “practical” (in contrast to substantial) limitations and reasons, there remain enough ecological modernization studies/scholars that do not focus in every publication on both consumption and production, in both empirical and conceptual terms. But Carolan's claim of ecological modernization as a productivist theory that treats consumption as a “nonissue” is a little outdated when situated in the 21st century.

## **Quantity and Quality of Consumption**

In the end, we think, the point most essential for Carolan is not so much the productivist hegemony of ecological modernization but rather the consumptive equivalent of the supposed call for more production: Ecological modernization theory and research do not emphasize and discuss the limits to our present-day levels of overconsumption as they can be found at least in the Northern or Western sectors of the global world system. Strangely enough, where others (e.g. Princen et al. 2002; Schor 1998) have coherently argued for the downsizing of consumption and for putting the issue of less or limits to consumption higher on the theoretical and political agendas, Carolan—while clearly sympathizing with these perspectives—seems hesitant to further position himself along these lines. Maybe this hesitancy is grounded in the awareness of the author that such a move would bring him beyond and outside the ecological modernization tradition, into what we labeled in earlier publications a demodernization position.

The main contribution of ecological modernization to a theory of sustainable consumption is not focused on the question of “how much,” but rather on the restructuring of social practices of consumption along criteria of ecological rationality. Sometimes this might result in (the need for) downsizing some consumption and lifestyle patterns, while increasing others. But as more consumption does not equal more additions and withdrawals, less consumption does not automatically mean less additions and withdrawals. The question is thus not “how much is enough,” but “what consumption is environmentally sustainable” and how can we turn unsustainable consumption practices into environmentally more sound ones. In setting out such a research program, ecological modernization starts its analyses from the existing institutions and lifestyles that “govern” contemporary consumption, developing realist-utopian models of environmental transitions.

Carolan’s hesitation to shift to the competing paradigm for studying sustainable consumption seems to be moved by his conviction that he sees “conceptual space—both actual and potential—for consumption within the framework of ecological modernization theory.” But we would not see how such a strong emphasis on the quantitative limits to modern consumption, as proposed by Carolan, can be easily reconciled with the main tenets of ecological modernization theory and research.

Finally, we very much regret the fact that Carolan in his article does not use any of the available *sociological* perspectives on consumption as a starting point to repair the perceived inadequacies of ecological modernization theory on consumption, but instead takes the route (or dead ends?) of approaches suggested by IPAT, POET, and some forms of neo-Malthusianism. Instead of opening new horizons by developing new concepts and theories (Shove 1997; Warde 1990; Wilhite 1997; Spaargaren 2003), the author brings us back to debates that figured strongly in the early days of environmental sociology and ecological modernization theory.

## Notes

1. Not unlike Cohen and Buttel, Carolan refers to the notion of super-industrialization to illustrate the claim of more production and more industry. Two remarks need to be made: (1) Of all ecological modernization scholars, only Joseph Huber has used the notion of super-industrialization in one of his initial writings (and we have referred to that once); (2) super-industrialization does not so much refer to just *more* industry, but rather to a movement *further into* the industrialization process, in contrast to the competing perspective of deindustrialization.

2. Interestingly, a more sophisticated attempt at the empirical falsification of ecological modernization has been undertaken by Pellow, Weinberg, and Schnaiberg (2000) in their study on recycling in Chicago. A recent study on American recycling schemes conducted from an ecological modernization perspective partly contradicts Pellow’s treadmill-of-production analysis (Scheinberg 2003). Such studies provide more fully elaborated empirical input to theoretical debates.

3. To name a few others: various contributions in Cohen and Murphy (2001); several papers in a number of workshops under the title “Consumption, Everyday Life and Sustainability” in, for example, Lancaster, UK, 1999, and Wageningen, the Netherlands, 2001; research projects of Päivi Timonen and of Minna Autio of the Department of Economy and Management, University of Helsinki; research within and following the European DOMUS project (Chappells et al. 2000; van Vliet 2002); several projects for the Netherlands Ministry of the Environment (e.g., Beckers, Ester, and Spaargaren 1999); Swedish research (e.g., Shanahan 2003). The list of ecological modernization studies on transparency of commodity chains and on chain inversion is even longer.

## References

- Beckers, T., P. Ester, and G. Spaargaren. 1999. *Verkenningen van duurzame consumptie*. Publication Series, Environmental Management. The Hague, the Netherlands: Ministry for the Environment.
- Chappells, H., M. Klintman, A. L. Lindèn, E. Shove, G. Spaargaren and B. van Vliet. 2000. *Domestic consumption, utility services and the environment. Final Domus report*. Brussels, Belgium: European Commission DG XII.
- Cohen, M. J. and J. Murphy. 2001. *Exploring sustainable consumption*. Oxford, UK: Pergamon.
- During, A. T. 1992. *How much is enough?* New York: Norton.
- Mol, A. P. J. and D. A. Sonnenfeld, eds. 2000. *Ecological modernisation around the world: Perspectives and critical debates*. London: Frank Cass.
- Pellow, D. N., A. S. Weinberg, and A. Schnaiberg. 2000. Putting ecological modernization to the test: Accounting for recycling's promises and performance. *Environ. Polit.* 9(1): 109–137.
- Princen, T., M. Maniates, and K. Conca, eds. 2002. *Confronting consumption*. Cambridge, MA: MIT Press.
- Scheinberg, A. 2003. A change by any other name: Re-examining the urban recycling experience in North America and its implications for ecological modernisation theory. *Environ. Polit.* 12(4):49–75.
- Schor, J. 1998. *The overspent American: Upscaling, downshifting, and the new consumer*. New York: Basic Books.
- Shanahan, H. 2003. *Exploring everyday life in households for a sustainable society*. Paper presented at the 6th Nordic Conference on Environmental Social Sciences, 12–14 June, Turku, Finland.
- Shove, E. 1997. *Notes on comfort, cleanliness and convenience*. Paper for the European Science Foundation workshop on Consumption, Everyday Life and Sustainability. Lancaster, UK.
- Spaargaren, G. 2003. Sustainable consumption: A theoretical and environmental policy perspective. *Society Nat. Resources* 16:687–701.
- Spaargaren, G. and A. P. J. Mol. 1992. Sociology, environment and modernity: Ecological modernisation as a theory of social change. *Society Nat. Resources* 5(4):323–344.
- van Vliet, B. J. M. 2002. *Greening the grid. The ecological modernisation of network-bound systems*. Wageningen, the Netherlands: Wageningen University.
- Warde, A. 1990. Introduction to the sociology of consumption. *Sociology* 24(1):1–4.
- Wilhite, H. 1997. *Cultural aspects of consumption*. Paper for the European Science Foundation workshop on Consumption, Everyday Life and Sustainability. Lancaster, UK.