



Paul R. Josephson. *Industrialized Nature: Brute Force Technology and the Transformation of the Natural World.* Washington, D.C.: Island Press, 2002. 313 pp. \$25.00 (cloth), ISBN 978-1-55963-777-0.

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What does it Matter to Nature? Ideology versus Technology in Resource

Paul R. Josephson's *Industrialized Nature: Brute Force Technology and the Transformation of the Natural World* rests on an intriguing premise: in the twentieth century, industrialized societies have deployed similar technologies for similar socio-economic and politico-cultural ends, with concomitantly similar environmental effects. For Josephson, author of several important books on the history of Soviet science and technology, this effort marks a departure from his previous work in terms of scope, ambition, and theoretical sophistication. He has tended in the past to place more weight on ideology and culture as the prime determinants of the kinds of technology that societies develop, as evidenced in the title of his 1996 book, *Totalitarian Science and Technology*. An admitted technophile, Josephson claims to have revised these views during the course of preparing *Industrialized Nature*. Insofar as the integrity of the biosphere is concerned, abstract political doctrines matter less than "brute force" technologies, he writes. Common to all states, they are characterized by massive scale and indiscriminate effect, destroying both the environment and the people of peripheral regions.

The term itself is, of course, redolent of techno-determinism. As one reads further, however, it becomes clear that Josephson does not define technology strictly as artifact, but, rather, as an embodiment of the knowledge systems and prerogatives of metropolitan elites, who articulate the national interest(s) and arbitrate the instrumental means by which these will be realized. Whether in the Brazilian Amazon, Soviet/Russian

Siberia, or the American Pacific Northwest, the architects of modernity have been motivated by a militant philosophy of progress that conceives dams, roads, railways, as well as forestry, fishery, and mining enterprises as tools to lay low and exploit recalcitrant nature for the greater social good. Thus, when Josephson speaks of technology, he is also referring to human value systems and a pan-state ideology, though this is not explicitly theorized. The resulting apparent contradiction is not necessarily irreconcilable, but the relationship between ideas and artifacts is never clearly articulated and the result is an uneasy tension in the author's exposition of the general and the unique in historical context.

Josephson succeeds admirably in revealing both human motivations and technology's socio-economic impact in the first of five case studies, an exploration of the mid-twentieth-century era of dam-building in the United States and the Soviet Union. There are striking similarities. In both polities, the practical and ideological aspects of dams were inextricable. Conceived in a time of crisis and rapid change, the great hydroelectric projects on the Columbia, Tennessee, Volga, and Dnepr rivers were designed not only to tame the natural world, but restore, or, in the case of the Soviet Union, reconfigure, a social order plunged into chaos by economic depression and political revolution. The product of national emergency, these public works projects destroyed fisheries and agricultural lands, as well as the communities they sustained, but also produced real gains in employment and lifestyle for urbanites. In turn, this served to propagandize the re-

spective doctrinal claims of the state promoters of such megaprojects.

Yet having revealed what these societies had in common, the author begs the question of what made them distinctly “capitalist” and “socialist” and why they were so inimical to each other. Indeed, Josephson’s striking claim that the “Stalinist plan for nature transformation” has been underway in all industrialized nations and especially the U.S. in the twentieth century raises further difficult questions regarding class and race conflict as they relate to the role of human beings as agents of industrial, cultural, and environmental change. Josephson acknowledges some of these, but prefers to address them solely in “world systems” terms of metropolitan master versus aboriginal subaltern. There is a corresponding swing towards a “harder” techno-determinism in the remainder of the case studies. In his comparison of Brazil and the Soviet Union in the 1960s, for example, brute force technology is defined as having “universal requirements” that render it “self-augmenting and autonomous.” Yet it was not “technology” but Brazilian and Soviet planners that had requirements: to use dams and roads to exploit vast resource-rich hinterlands as part of large-scale projects of social and environmental engineering. Further, not all technologies, including those of a certain class, must necessarily issue from the same causal impetus or have similar socio-environmental consequences. While it is true, on a very general level, to say that Brazil and the Soviet Union experienced deforestation, soil erosion, and water and air pollution, the resulting socio-environmental landscapes in both countries in that period were dissimilar. One cannot compare the goals and methods of a military-backed oligarchy and its drive to denude the Amazon and displace indigenous and peasant communities for the profit of foreign and local ranching and natural resource interests with those of the directors of the giant Soviet construction trusts, with their ethos of full employment and rapid national industrial

development, however misguided and costly. As well, the asymmetrical development of industry and consumer patterns among modern nations means there is no template solution for environmental problems. Not all have the same degree of investment in internal combustion engine transport or centralized electrical power production/distribution infrastructure, for example; some may find it easier than others to adopt cheaper, more sustainable technologies.

Josephson never really reconciles the role of politics with an “iron law” of brute force technology that “pushes people aside.” His philosophy seems informed most of all by the metaphor of the modern hydroelectric megadam, the artifact that serves as his exemplar of human aspirations and folly. With its scale and aura of permanence, it drowns out human agency both literally and figuratively. Yet history demonstrates that technology is neither inevitable nor eternal. Americans began to oppose construction of hydroelectric and nuclear plants with the emergence of the environmental movement in the 1960s, while sustainable energy alternatives including photo-voltaic, tidal, and wind turbine technologies have become increasingly popular. There is, however, much to commend in Josephson’s work, particularly a willingness to confront and contest canonical assumptions regarding the “Western Way.” His exploration of at least some of the ecological consequences of the Cold War in a comparative study reaching beyond the borders of the Soviet Union breaks new scholarly terrain and represents a welcome counterpoint to polemics like Murray Feshbach and Alfred Friendly Jr.’s *Ecocide in the USSR: Health and Nature under Siege* (1992). With *Industrialized Nature*, Josephson brings out the complexity of urban society and the moral ambiguity of the modernist project, illustrating how human dreams coupled with the enabling power of sophisticated technologies can effect wide-reaching and often unanticipated social and environmental change.

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