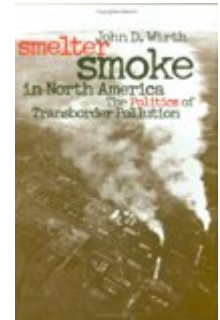


John D. Wirth. *Smelter Smoke in North America: The Politics of Transborder Pollution.*
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In *Smelter Smoke in North America* John D. Wirth uses two case studies to explore transborder pollution and regulation in North America. Through an exploration of the Trail smelter case of 1927-1941 and the Gray Triangle litigation of the 1980s, Wirth argues that the smelting industry has thought in continental terms at least since the 1920s, and that it was the development of a federal regulatory framework in the 1970s which later permitted environmental policy to operate under similar principles.

Wirth draws on a wealth of archival data, including Canadian sources and the unpublished papers of USDA scientists, to challenge existing interpretations about the significance of the Trail arbitration (usually reduced to the principle of "the polluter pays"). A sub-argument considers how legal pressures and political wrangling impeded the efforts of the USDA scientific team. In the second half of the book Wirth makes extensive use of interviews with activists, industry officials, and political figures to narrate the later U.S.-Mexican negotiations over the Douglas Reduction Works in Arizona, and to argue that, a generation

after Trail, the political context has significantly shifted. Now grassroots activism plays a critical role in environmental regulation, and nations are learning to cooperate across borders on continental environmental issues. The importance of Wirth's findings is considerable, but the book overall suffers from problems with presentation.

THE TRUE SIGNIFICANCE OF TRAIL: NARRATIVE

Smelter Smoke in North America opens with an examination of the Trail smelter litigation of the early twentieth century. In the 1890s, two smelters opened on both sides of the U.S.-Canada border in British Columbia and Washington. The Washington smelter in the town of Northport was closed in 1921 due to an inability to secure long-term contracts; the Canadian smelter in Trail, the Consolidated Mining and Smelting Company, went on to form the industrial hub for mining and smelting in the region. As Trail boomed, Northport declined. During the 1920s, farmers in Northport formed the Citizens' Protective Association and filed suit against Consolidated. Caught in a community with a stagnant economy and declin-

ing land values, they targeted the pollution emanating from the Canadian smelter as a crucial factor in their unhappy condition.

What was initially a local dispute soon expanded to engage both the Canadian and U.S. governments at the federal level. The usual methods of compensation for smoke damage--purchase of affected lands and payment of damages--failed in this case. Washington did not permit foreign ownership of state lands, and the farmers were not satisfied with the monetary compensation offered by Consolidated. Unable to resolve the issue using local or state authorities, the Citizens' Protective Association enlisted the help of the State Department; this in turn led Consolidated to ask the Canadian government for assistance.

The case was submitted to arbitration under the International Joint Commission, a body formed to resolve international disputes. Between 1927 and 1931, scientists operating under the auspices of the USDA and the National Research Council of Canada sought information about the extent and character of damage caused by the smelter's emissions of sulfur dioxide. Central to the dispute was the so-called "invisible injury thesis"; in the 1880s German scientists had raised the possibility that damage caused by sulfur dioxide exposure was limited not only to visible burns, but also included chronic, long-term "invisible" damage. USDA scientists followed this line of inquiry, while the Canadian scientists (and scientists friendly to the smelter industry on both sides of the border) challenged it.

However, Wirth argues, the resolution of a scientific question was not, ultimately, the main focus of the scientific activity that occurred relative to the Trail case. Instead, scientists on both sides worked to defend the legal interests of their particular constituencies (the farmers for the USDA, Consolidated for the Canadians) and their scientific data was, as a result, limited to proving legally defined damage to crops.

USDA scientists were able to make a convincing case that exposure to sulfur dioxide emissions did cause measurable damage, even when it was not visible to the casual observer. In the pro-industry climate of the times, the Commission did not seek to punish Consolidated; instead they were impressed by the company's innovative efforts to reduce air pollution through a variety of control systems. Weighing these efforts with the findings of the USDA scientists, the Commission tried to strike a balance in their decision, and awarded the farmers \$350,000 in damages in 1931 (half of what they'd been demanding) while requiring Consolidated to maintain its new regulatory regime. The Commission's ruling was rejected by the U.S. plaintiffs (who felt the penalty was inadequate), and a second set of hearings was held before the three-judge panel of the newly created Trail Arbitral Tribunal from 1937-1938.

This time, the U.S. side was trounced by Consolidated and its supporters. Funding deficits during the Depression hampered USDA research, while Canadian research was revitalized by an infusion of funds from Consolidated. Canadian efforts were further supported by pro-industry scientists on both sides of the border -- including some within the U.S. Bureau of Mines. The result was that the USDA's claims about invisible injury were discounted. Moreover, Consolidated's promotion of innovative recovery techniques (which reduced pollution) and the pro-industry attitude of the Tribunal's scientific experts swayed the decision in favor of the smelter industry. A new, smaller penalty (\$78,000) was assessed in 1938, and Consolidated continued operating under the new regulatory regime it had helped establish.

THE TRUE SIGNIFICANCE OF TRAIL: ARGUMENT

I provide this lengthy narrative because it is difficult to properly appreciate Wirth's argument without it. There are three important assertions made here. First, Wirth argues that the Trail case is significant primarily because it demonstrates

that crossborder alliances—at least for industry—are nothing new. This challenges the dominant narrative of international policy regulation, which holds that regulating transnational corporations is a recent problem.

Second, according to Wirth, the Trail case was not about establishing an international precedent for addressing transborder pollution – as has been generally assumed. Although the Trail case did establish the principle of "the polluter pays," both the United States and Canada were actually trying to *avoid* setting a comprehensive precedent. The United States was concerned that any such precedent could be brought to bear against U.S. companies that polluted across both Canadian and Mexican borders. Similarly, Canada was concerned about Canadian smelters in the Great Lakes region. The result was that both sides worked assiduously to keep the Trail ruling localized, and the final ruling favored a standard based on the "best available control technology" rather than adherence to a stricter absolute standard.

Third, Wirth argues that the hearings' emphasis on legally-defined damage distorted the science of the case. Instead of promoting "good" science, the legal demands of the hearings reduced what could have been a vigorous but productive scientific debate to a series of legal counterclaims. Even as industry cooperated across borders, Wirth argues, scientists were divided into opposing camps unable to share information for fear of compromising their legal positions. (Wirth places a bit too much faith in the ability of scientists to do "objective" work under other conditions, in my opinion, but his argument still stands.)

THE MEANING OF THE GRAY TRIANGLE

The story of the efforts to regulate, then shut down, the Douglas Reduction Works is more straightforward. Douglas, a smelter run by the Phelps Dodge Corporation in Arizona, was "brought on line" in the early 1900s and became an important fixture in the corporate, community,

and industrial landscapes along the border. Even more so than Trail's Consolidated, the Douglas smelter operated in a crossborder environment. Employing both American immigrants and Mexican labor, smelting ores from both sides of the border, paying damages to Mexican farmers and supported by the Arizona state legislature, Phelps Dodge transcended national boundaries. That this was recognized early on can be seen in the fact that the Douglas works were among those that U.S. officials involved in the Trail dispute had in mind when they advocated keeping Trail local.

Initially Phelps Dodge, like Consolidated, enjoyed a position of power and comfort; neighboring communities perceived smelter pollution as "the smell of money" and the state economy was invested in keeping the mining and smelter industry running at full throttle. Local protests, few in number, achieved about as much success as the Citizens' Protective Association in Northport would have had without federal support – which is to say, little or none beyond some small monetary compensation for visible damage.

However, in the 1970s, the context in which Douglas and other smelters operated shifted. A number of factors accounted for this change. First, the 1970 Clean Air Act and subsequent establishment of the Environmental Protection Agency provided a new regulatory framework, at least in the United States. Armed with this new tool, citizen activists came to play a crucial role in challenging smelter pollution. Second, national and public opinion had shifted away from industry. The position of privilege that had enabled companies like Consolidated to call the shots relative to their own regulation had eroded by the 1980s. Issues of health and quality of life became much more salient. Third, research into the causes and effects of acid rain demonstrated decisively that border pollution was *not* a local issue, but rather one with continental significance. Finally, the presence of two Mexican smelters across the border (the other two legs of the so-called "Gray

Triangle") brought provided additional reasons to regulate Douglas. Failure to bring Douglas into compliance with federal and state standards, it was argued, would weaken the position of those in the United States who advocated regulation of the Mexican smelters, whether to control acid rain caused by smelter smoke or to prevent less-regulated Mexican companies from out-competing their regulated U.S. counterparts. The "Gray Triangle" also provided an important incentive for the creation of binational regulatory frameworks, such as the precedent-setting La Paz agreement of 1983.

The result, argues Wirth, was that citizen activists were able to marshal an attack against the Douglas Reduction Works on a number of fronts, armed with the new authority the Clean Air Act and recent scientific research gave them. In the earlier Trail case, the smelter industry as represented by Consolidated was able to fend off its critics by installing innovative control technology. In the "Gray Triangle" case the industry could only play for time. Although cheap to run uncontrolled, the Douglas plant was too old to upgrade without incurring expenses the company was willing to pay. Ultimately, the combination of new regulatory mechanisms, citizen activism, and the "Mexican linkage" resulted in the closure of the Douglas Reduction Works in 1987. The conclusion that Wirth draws from this is that policy, like industry, must operate across borders, and that it must offer a role for citizens to play.

ASSESSMENT

Smelter Smoke in North America thus offers a number of useful insights about transnational pollution and environmental regulation, and interesting observations about the role of science and grassroots activism. Moreover, Wirth deliberately includes the industry perspective in his examination, arguing -- with some justification -- that it has been excluded from many histories of environmental policy. All of these things make *Smelter Smoke in North America* worthy of exam-

ination by the reader interested in the history of air pollution and its regulation in North America.

However, three things make Wirth's argument less effective than it could be. First, although the book argues in favor of a continental perspective on air pollution, it tends to emphasize the U.S. side. The account of Trail is fairly balanced -- indeed, Wirth makes use of Canadian sources that had been used only in a limited way prior to his account -- but the research on the Gray Triangle is noticeably tilted in favor of U.S. sources. Wirth relies heavily on interviews with people involved in the litigation such as Arizona governor Bruce Babbitt and activists Richard Kamp, Robert Yuhnke, and Priscilla Robinson. Given that the Douglas case was resolved less than twenty years ago, this use of oral sources is both appropriate and useful. However, interviews with corresponding Mexican figures are lacking, and even the Mexican archival data is relatively sparse in comparison to the wealth of material gleaned both from the U.S. activists and from Phelps Dodge.

Second, the effectiveness of Wirth's argument is undercut by problems of presentation. For one thing, the prose is studded with acronyms, perhaps unavoidable when writing a history that focuses on the actions of bureaucracies, activist organizations, and complex technological processes. A list at the beginning of the book provides some assistance, but I found it awkward to keep flipping back to see to what the author was referring. Moreover, not all acronyms or abbreviations were listed. For example, the Consolidated Mining and Smelting Company, listed as COMINCO in the list of abbreviations, was referred to far more often in the text as "C. M. & S." On several occasions, heavy use of acronyms produced sentences like the following: "The EPA might be prepared to grant an NSO variance to the SIPs, but not without changes in the way the SCS at Douglas was being operated and a plan to capture fugitive (nonstack) emissions" (p. 194). If the acronyms were leavened more regularly with the names of the orga-

nizations and processes involved, it would make the argument easier to follow.

Third, the non-text sections of the book fail to adequately support the text. (Reflecting this lack of attention to visual materials, perhaps, there is no list of maps and tables.) Placement is ineffective, with maps and illustrations often coming several pages after being discussed in the narrative. Maps, which one would think both appropriate and necessary in a book dealing with boundaries, are inadequate. There is no map, for example, showing the location of the Trail smelter relative to the U.S-Canadian border. The five maps which are included do not provide the reader with the information needed to perceive the spatial relations which Wirth describes (such as the location of affected communities relative to the "Gray Triangle" or the direction of prevailing winds). Instead, the maps provided are primary sources themselves, and thus better suited to illustrating contemporary perceptions of the issue than supporting Wirth's argument directly.

Charts and tables are hit-or-miss in their effectiveness. Some, like the chart showing the reduction of sulphur emissions from the Trail smelter between 1900 and the mid-1990s, are clear and effective (p. 6). Others, like the table "Expenditures on the Two Smelter Fumes Investigations" are more confusing than enlightening (p. 65). This table accompanies an analysis of spending discrepancies between the government-funded USDA research team and the Canadian team, which was supported by funds from both the government and, increasingly, the Consolidated Mining and Smelting Company. The table lists the budgets for the USDA research team between 1928 and 1938, broken down yearly and clearly revealing a steady reduction over time. However, the Canadian government funding is represented by a single lump sum for the years 1927-1931. The funds received from Consolidated do not appear at all, although they can be deduced by subtracting the government figure from the total. This

makes it difficult to assess the changes in the Canadian situation. Moreover, the U.S. figures are in U.S. dollars, and the Canadian figures in Canadian dollars, precluding an easy comparison of the two.

CONCLUSION

Smelter Smoke in North America offers an interesting look at transnational industry and pollution. For readers interested in policy and the legal aspects of transborder disputes, this book offers many valuable insights. For readers less familiar with the intricacies of international law, federal bureaucracies, the smelter industry, and localized grassroots activism, it can be hard going. While this book makes a noteworthy contribution to the history of international pollution, problems in presentation make it difficult for the general reader to fully appreciate the importance of Wirth's argument.

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