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## Why Is the River Rhine Cleaner than the Great Lakes (Despite Looser Regulation)?

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In this article, I compare the efforts to protect two transboundary watersheds that are home to some of the largest industrial areas in the world: the Great Lakes basin in North America and the Rhine river in Western Europe. Specifically, I show that the industrial discharges into the Great Lakes have been more toxic than the releases into the Rhine. This is puzzling as the laws and international agreements pertaining to the Great Lakes have been more stringent than those concerning the Rhine. I solve this puzzle in three steps. First, I show that the many voluntary investments in water protection by companies along the Rhine have outdone the considerable efforts that the U.S. laws have required of Great Lakes corporations. Thereafter, I argue that these different inclinations to invest in water protection have sprung from two alternative modes of conducting environmental politics: an adversarial one in the Great Lakes basin and a more consensual one in the Rhine valley. Last, I use an historical-institutional approach to show which institutional differences (at both the domestic and international levels) have led to the emergence of these different modes of conducting environmental politics in the two basins.

### Introduction

**I**n this article, I compare the efforts to restore two fragile watersheds that are home to two of the largest industrial areas in the world. More precisely, I compare the attempts that have been made to keep toxic substances out of the industrial releases into the river Rhine and the Great Lakes.

The Rhine flows from the Bodensee in the Alps, through Switzerland, France, and Germany, before scattering all over the

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I gratefully acknowledge the help I received in writing this article from Uda Bastians, Tanja Börzel, Marc Gallanter, Adrienne Heritier, Gerd Junne, Ron Mitchell, Dan Oakey, Graham Wilson, Jan Zielonka, and the anonymous reviewers of this journal. Financial support for the research reported here was generously offered by the KLM Educational Foundation, Ir. Cornelis Lely Stichting, and the Dutch Council for Scientific Research (NWO). I am also thankful to Dean David Trubek and his colleagues at the International Institute of the University of Wisconsin for providing me with all the facilities that I needed to undertake the Great Lakes case. Address correspondence to Marco Verweij, Max Planck Project Group on the Law of Common Goods, Poppelsdorfer Allee 45, 53115 Bonn, Germany (email: [verweij@mpp-rdg.mpg.de](mailto:verweij@mpp-rdg.mpg.de)).

Netherlands. Along its shores, some 18% of the world's chemical industry has been located. The 1,320 kilometers-long river connects the world's biggest seaport (Rotterdam) with the largest inland port on the globe (Duisburg). Nearly 50 million people presently live in the Rhine valley (International Commission for the Protection of the Rhine, hereafter ICPR, 1998).

The Great Lakes in North America (encompassing Lakes Superior, Michigan, Huron, Erie, and Ontario) and the region surrounding them are also of paramount economic importance. Of the 500 largest industrial companies within the United States, almost half have their headquarters in Great Lakes states (Minnesota, Wisconsin, Illinois, Ohio, Indiana, Michigan, Pennsylvania, and New York). About 33 million people live in the Great Lakes basin (Environment Canada 1995). In sum, both the Rhine valley and the Great Lakes basin form sites where ecological values and huge economic interests come together, and because of this it is interesting to compare environmental protection efforts in these two regions.

For methodological reasons that I explain later, my analysis is limited to a comparison between the effluents of the firms that are bordering the Rhine and the releases of the enterprises located on the United States side of the Great Lakes watershed. This comparison produces a remarkable puzzle. Compared to their counterparts on the Rhine watershed, companies on the United States side of the Great Lakes basin have been confronted with: (1) stricter domestic water protection laws; (2) more ambitious international agreements pertaining to water protection; and (3) powerful actors that have relentlessly pushed for water protection, including an influential international organization, a well-organized epistemic community of scientists, and a large number of cooperating and vigorous environmental organizations. These factors would lead one to assume that the effluents of U.S. corporations into the Great Lakes have been less toxic than those of European enterprises into the Rhine. This appears not to be the case, however. Instead, it appears that the opposite has occurred.

The primary aim of my article is to unravel this puzzle. I do so by employing an institutional approach. To be more precise, I use the historical version of new institutionalism. Applying this framework comes at a cost. Historical institutionalism is well-known for not being parsimonious. It typically highlights numerous interrelated, historically specific causes and effects—at various levels of analysis. John Ikenberry (1988:241–42) has argued that this “theoretical complexity” is often unavoidable when employing historical institutionalism: “[An historical focus on institutions] does not pretend to provide the basis for a formal and parsimonious set of propositions that researchers can test in a simple fashion. . . . The virtue of the institutional approach is its

necessity.” This fact applies to my analysis as well. The account I offer highlights a range of related and contingent causal variables—at both the domestic and the international levels. My choice for this perspective has been motivated by the inadequacy of rival explanations (which I demonstrate later).

One contribution that I make to the analysis of environmental regulation concerns the effectiveness of different regulatory approaches to environmental protection. Most of the comparative literature on environmental protection has focused on national differences in regulatory style and has not extensively addressed the actual outcomes of different policy styles. Only in recent years have various analysts begun to compare the environmental (and other) results that have been accomplished with alternative regulatory styles.<sup>1</sup> My analysis adds to this new literature by considering the effects of alternative policies on the actual quality of ecosystems (as measured by chemical and biological parameters). My study offers more ammunition for the argument laid down in this budding literature that the adversarial policy style followed in the United States may in fact lead to less environmental protection than the more consensual style that has evolved in Western Europe and Japan.

The relative complexity of my institutionalist account makes it vital to adhere to strict rules of inference. I have closely followed Lijphart's (1975) “comparable cases-strategy.” This strategy entails choosing cases: (1) that vary significantly in the independent variable; and (2) that are as similar as possible regarding all other potentially explanatory factors. The dependent variable of this research is the toxicity of industrial discharges into water basins, while the independent variable consists of the institutional setting. When I began, I was aware of significant variations in the independent variable. These institutional differences will be meted out in the remainder of this article. Many other factors that might explain the differences between the cases fall into either of the two following categories. Various potentially explanatory variables have quite similar values across the two cases. During the period of investigation (1970–1998), all of the countries in both the Rhine and the Great Lakes watersheds have been stable democracies, have experienced high levels of prosperity, have shared comparable levels of environmental concern, and have tried to regulate water protection in similar ways. Furthermore, the sectoral composition of firms in both the Rhine and Great Lakes watersheds are alike. Both regions are dominated by steel and iron production, mining, chemical industry, and the production of machinery and equipment. Because these factors are similar across both cases, all of them can be ignored in the explanation. Nevertheless, vari-

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<sup>1</sup> Especially Kagan and Axelrad 1997; Scruggs 1999; Aoki and Cioffi 1999.

ous other factors could easily lead one to assume that the effluents of U.S. firms into the Great Lakes have been *less* toxic than the industrial discharges of European firms into the Rhine. I consider these factors in the next section of this article (“Puzzling Elements”).

The logic of Lijphart’s strategy has prevented me from choosing a broader dependent variable than industrial effluents. In particular, I have not looked at agricultural and municipal effluents, at airborne depositions of pollutants, or at soil contamination. Including these factors would have prevented me from concentrating on institutional factors, as these forms of pollution have been heavily influenced by noninstitutional elements, such as infrastructure, geography, and financial resources.

Another methodological admonition has kept me from analyzing the discharges into the Great Lakes from Canadian firms. This omission may seem somewhat surprising. My arguments in this article hinge on the differences between American institutions that sustain adversarial relations among actors and European institutions that bring about more understanding among stakeholders. At first glance, it might therefore seem interesting to have also considered effluents of Canadian firms into the Great Lakes basin, as Canadian institutions resemble European ones (Lipset 1990), and as their environmental decisionmaking processes are often based more on consensus than they are in the United States. I have not done so for a basic methodological reason: the need to choose units for comparison that are independent of each other (King, Keohane & Verba 1994:222). With regard to the effluents of the Canadian and U.S. firms around the Great Lakes, this condition is certainly not met.

The two countries are highly interdependent, with the United States overshadowing Canada concerning events not only on the U.S. side but also on Canada’s side of the basin. The Great Lakes region is economically highly interdependent—with U.S. firms playing the more-dominant role.<sup>2</sup> Many U.S. companies own Canadian enterprises in the Great Lakes area. In addition, U.S. firms have extensive production facilities in Canada’s part of the basin. Moreover, commodity trade between Canadian and U.S. firms in the Great Lakes region is intense. These extensive economic (inter)dependencies mean that the decisions made by Canadian firms in the Great Lakes basin are codetermined by the decisions and cost structures of the U.S. corporations in the basin, either directly (through U.S. ownership of Canadian firms and plants) or indirectly (through competition and trading relations).

These conditions make the cases too interdependent to be useful for comparative purposes. But there is more. Since the

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<sup>2</sup> See Federal Reserve Bank of Chicago (1991).

early 1990s, Canadian and U.S. firms have combined their efforts to influence environmental policy initiatives in the Council of Great Lakes Industries. This council represents the interests of a great number of Canadian and U.S. firms in the Great Lakes basin, at both the national and international level. To be able to influence initiatives, the council attempts to unify the viewpoints and policy positions of Canadian and U.S. firms.<sup>3</sup> This situation makes the Canadian and U.S. cases even more interdependent.

U.S. environmental policies frequently serve as a motor for the development of Canada's environmental policies. To describe this impact of U.S. environmental policy on Canadian plans, George Hoberg (1991) has pictured the Canadian environmental departments as "sleeping with an elephant." Thus not only are the decisions of Canada's Great Lakes firms highly influenced by U.S. enterprises but also the actions of Canada's environmental authorities are much affected by their U.S. counterparts. Because of these interdependencies I could not have gained explanatory power by considering the toxicity of the discharges of Canadian firms into the Great Lakes.

My study focuses on the years 1970–1998. To reconstruct this period, I held 59 interviews with stakeholders in the Rhine basin, and 48 interviews with those in the Great Lakes watershed. The organizations covered included government agencies, international commissions, firms, business associations, and environmental groups.

In the remainder of this article, I spell out the puzzle of this study, consider the comparability of the two cases, then offer an explanation of my findings, in three steps. First, I show that the Rhine companies made extensive investments in water protection that went far beyond existing legal norms and international obligations, whereas the Great Lakes corporations usually restricted themselves to making the legally required investments in water protection. Because the American protection norms were quite stringent Great Lakes enterprises have indeed been able to significantly reduce their discharges of toxic material. The voluntary measures taken by the Rhine firms, however, appear to have led to even greater reductions. Second, I show that the reluctance of Great Lakes firms to invest in antipollution measures is part of a broader set of antagonisms that have greatly divided the involved organizations in the Great Lakes watershed—as opposed to the Rhine valley. Third, I highlight the three institutional factors, at both the domestic and the international level, that have fueled these divisions: (1) American exceptionalism; (2) the institutions that shape the relationships between public and private organizations in the involved countries; and (3) the

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<sup>3</sup> Author interview with representative of the Council of Great Lakes Industries, Ann Arbor, MI, 4 June 1997.

international regimes for the protection of the Great Lakes and the Rhine. After presenting this historical-institutional explanation, I consider (and reject) some alternative accounts, including one based on the rational choice version of new institutionalism and another one based on tax differences.

### **Puzzling Elements**

Since the 1970s, the chemical pollutants discharged by U.S. corporations into the Great Lakes have been cut back considerably. Still, it appears that these reductions have been smaller than the reductions of toxic effluents discharged into the Rhine River by enterprises in the Rhine valley. This difference has occurred despite the existence of many elements between the two cases that would have led one to predict the opposite. These factors include

- domestic water protection laws in the United States that have been more stringent than anywhere in Europe;
- international environmental treaties in North America that have been stricter and more influential than the international agreements on the protection of the Rhine;
- excellent, decades-long international cooperation between Canada and the United States concerning the protection of the Great Lakes, and (until 1987) internecine diplomatic strife in the Rhine basin;
- a large and influential international organization in the Great Lakes area, the International Joint Commission (IJC), as compared to the small and weak International Commission for the Protection of the Rhine against Pollution (ICPR);
- environmental organizations in the Great Lakes region that have been better organized and that have had more access to political decisionmaking than similar groups concerned with the Rhine; and
- a thriving and well-organized epistemic community pushing for the restoration of the Great Lakes—something virtually absent in the Rhine basin.

All of these assertions will have to be substantiated. First, I argue that the effluents of U.S. firms into the Great Lakes have remained more toxic than the effluents of corporations into the Rhine (despite the fact that major reductions in the amount of effluents have been accomplished in both regions).

### **Effluents Compared**

Comparing the toxicity of industrial effluents in both watersheds is complicated because of divergent measurement systems, differing research and policy priorities, and dissimilar industrial activities. The water quality of the Great Lakes is not systemati-

cally monitored. Instead, the extensive scientific research concerning the Great Lakes has focused on estimating the presence and effects of contaminants in fish, birds, and humans. In contrast, the water quality of the Rhine has been carefully measured since the early 1970s, and less emphasis has been put on researching the effects of pollution on living matter. Since 1988, enterprises in the Great Lakes states have had to report extensively on the toxicity of their wastewater, while Rhine firms have never done so. These differences make it impossible to find a single yardstick with which to conclusively compare the industrial discharges since 1970 in the two water basins. Nevertheless, a coherent picture can be formed by using several yardsticks.

The continued release of the most toxic chemicals into the watersheds can be used as a first indicator. In 1991 the IJC listed 11 “critical pollutants.” This list contains chemicals that have been widely viewed as highly toxic in both the Rhine and Great Lakes basins. According to the IJC and the U.S. Environmental Protection Agency (EPA), these 11 pollutants are still being released into the Great Lakes by U.S. firms (EPA 1997).<sup>4</sup> Admittedly, at present, these 11 pollutants enter the Great Lakes in small amounts only—their releases have been greatly cut down since the 1970s. However, these substances not only are highly poisonous but also rank among the least-biodegradable chemicals. Hence, the release of even small quantities of these contaminants is seen by the involved agencies as a major environmental problem. Five pollutants are not relevant here, as they are solely discharged by farms. The question now becomes: Are the six remaining pollutants still flushed into the Rhine?

Ideally, I would have been able to answer this question by consulting data on the discharges of wastewater by Rhine firms. Unfortunately, unlike U.S. firms, companies in Western Europe are not obliged to publish such data. Because Rhine enterprises have also not disclosed these figures voluntarily, it is impossible to establish directly the toxicity of the releases of Rhine corporations. Therefore, I had to discover an indirect way of determining these levels. An opportunity was provided by the sophisticated measurement system of the Rhine’s water quality, which has been operated since 1970 by the water supply companies along the river (organized into the Internationale Arbeitsgemeinschaft der Wasserwerke im Rheineinzugsgebiet [IAWR]).

This measurement system is fine grained in several respects. First, the IAWR measures the Rhine’s water quality at many observation points all over the basin. Second, the IAWR establishes the water quality of the Rhine continuously. Third, the IAWR checks the river’s water for a large variety of chemical substances.

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<sup>4</sup> The EPA publications are based on the wastewater data reported by Great Lakes firms. Such public reporting by firms is obligatory in the United States under the 1986 Emergency Planning and Community-Right-to-Know Act.

The organization publishes its measurements in its yearly report, *Rheinberichte*.

But it is not only the water supply companies that monitor the Rhine; monitoring is also done by the national authorities in all Rhine countries. Their analyses have been published by the International Commission for the Protection of the Rhine (ICPR). The water supply companies and the ICPR have thus mapped the river's water quality in great detail for some 30 years. One can then deduct the toxicity levels of the discharges by Rhine firms from the water quality readings of the river itself. Shortly after chemicals are released into the Rhine, they are registered by the measurement systems of the IAWR and/or the ICPR. Because of the existence of these fine-grained monitoring systems, no released chemicals can escape registration before they enter the North Sea. Intense monitoring therefore makes the Rhine's water quality a reliable proxy for investigating the toxicity of industrial effluents dumped into the waterway.

**Table 1.** Average Levels of Six Specific Toxic Substances Detected in the Rhine River at Lobith, Netherlands, in 1996

Toxic Substance	Levels Detected (in µg/l)
polychlorinated biphenyls (PCBs)	6–12*
dioxin (2,3,7,8-TCDD)	<
furan (2,3,7,8-TCDF)	<*
mercury	0.038
benzo(a)pyrene	<
lead	4.5

SOURCES: ICPR and IAWR (1996).

NOTE: The symbol < stands for quantities too small to be detected by current measurement techniques. Quantities are 1996 averages measured in micrograms per liter (µg/l).

\* Denotes level obtained from ICPR.

For my analysis, I relied on 1996 data regarding water quality in a downstream part of the river; namely, in the Dutch town of Lobith. The results are presented in Table 1. The data in Table 1 show that, in 1996, three of the six persistent toxic substances that were still being discharged by Great Lakes firms could not be detected in the Rhine (dioxin, furan, and benzo(a)pyrene). This result means that these pollutants were no longer present or were at such low levels that they were undetectable in the effluents of Rhine corporations. Three other substances (polychlorinated biphenyls [PCBs], mercury, and lead) did show up in the Rhine water. PCBs may have been present in the Rhine water because of previous discharges of these substances. In 1996, no PCBs were dumped into the Rhine. In the 1970s and 1980s, however, PCBs *were* released into the Rhine. These substances then sank and polluted the river's sediment. Because of river currents disturbing the sediment PCBs are still being re-



leased from the riverbed, explaining why they can still be found in the waters of the Rhine.<sup>5</sup>

The two other substances—mercury and lead—that were still detected in the Rhine in 1996 are quite different from the others listed in Table 1. Mercury and lead are naturally occurring metallic elements, while the others are human-made. Therefore, it is not realistic to demand zero levels of mercury and lead. For these elements another comparison is needed. The Rhine water supply companies have established stringent standards for the water quality of the river, and the levels of both lead and mercury in the Rhine were found to be well within these standards in 1996 (RIWA 1996:14). If these standards are met, it is possible to prepare safe drinking water using natural purification methods.

Perhaps, *prima facie*, the results shown in Table 1 do not seem impressive. However, these six substances are among the most dangerous and persistent chemicals used by modern industry. Moreover, these chemicals and elements represent large categories of pollutants. PCBs come in 209 varieties, dioxin includes a family of 75 chemicals, and furan has 135 variations. The finding that these six extremely toxic or carcinogenic substances are no longer discharged into the Rhine, even though they are still being released in small amounts into the Great Lakes, indeed represents a major difference between the two cases.

A second yardstick concerns the industrial releases into both watersheds since 1988. From that year onward, U.S. companies have been obliged to report annually which ones and how much of each of a wide range of chemical or industrial pollutants they have released into the open air and water. Their reports are published annually by the EPA as the “Toxics Releases Inventory.”<sup>6</sup> This inventory also reports the reductions in the amounts of industrial discharges into open waters by companies in the Great Lakes states. Since 1988, the Great Lakes states’ industries have reduced their discharges of the wide range of pollutants covered by EPA’s Inventory into the open waters by approximately 60%. This figure represents not only the industrial releases into the Great Lakes and its basin but the discharges into open waters, which includes waters other than the Great Lakes as well. The latter measurement can be taken as a good approximation of the former, as most open waters in the Great Lakes states feed into the lakes. Moreover, the 1990 Great Lakes Critical Program Act (the major piece of legislation protecting the lakes at present) also pertains to all firms in the Great Lakes states.

How do the Rhine companies’ discharges since 1988 compare? Others have reported various scientific estimates of the re-

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<sup>5</sup> Explained in Wieriks and Schulte-Wülwer-Leidig (1997:152). At the time of this writing, Wieriks and Schulte-Wülwer-Leidig were, respectively, the Executive Secretary and the Deputy Secretary of the ICPR.

<sup>6</sup> These data are available at <http://www.epa.gov/triexplorer/>.

ductions of water pollution by Rhine firms based upon data published by the IAWR and ICPR.<sup>7</sup> These estimates show that the Rhine companies have accomplished an 80% to 90% reduction in levels of many chemical pollutants in their wastewater discharges since 1988. The percentages of reduction in effluents for both the Great Lakes and the Rhine do not refer to exactly the same contaminants, however, but to a group of some 30 chemical categories that are considered to encompass the most toxic substances entering each particular watershed. Therefore, they can be used as a general approximation of the extent to which industrial water pollution has diminished in both regions from 1988 onward. These figures provide further basis for the argument that although Great Lakes companies have significantly reduced their water pollution, Rhine firms have made even greater steps to do so.

Perhaps the firms in the Great Lakes region made greater reductions of their water pollution *before* 1988 (as compared to their counterparts in the Rhine valley). I found no data for the Great Lakes area that can either prove or disprove this suggestion.

Fortunately, scientific estimates of the chemical pollution of the Rhine are available for this period and can be used to test the counterfactual proposal.<sup>8</sup> These estimates indicate that the levels of many chemical substances found in the Rhine in 1986 and 1987 were 80% to 90% lower than that found in the early 1970s. In fact, the 80% to 90% reduction in industrial pollution of the Rhine that was accomplished between 1988 and 1998 actually followed a similar wave of large decreases in levels of pollution between 1970 and 1987. This situation may explain the clean state of the river at present.

It is unlikely that the Great Lakes firms made greater strides in reducing lake pollution than the Rhine companies reducing river pollution between 1970 and 1988, for if they had diminished their pollution by *more* than 80% to 90% in that period they would have virtually eliminated the chemical pollution of the lakes by the end of the 1980s. This has clearly not been the case, as indicated by the continued presence of contaminants in the fish and birds of the Great Lakes (Gilbertson et al. 1998), as well as by the ongoing environmental concern and activities of the IJC, EPA, environmental groups, and the firms themselves. Moreover, this alternative scenario seems quite incompatible with the finding of Christopher Allen (1989:172) that Germany's chemical enterprises invested twice as much in environmental protec-

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<sup>7</sup> See also Stigliani et al. (1993); Beurskens et al. (1994); Tittizer et al. (1994); and Wieriks & Schulte-Wülwer-Leidig (1997).

<sup>8</sup> See Malle (1991); Hellmann (1994); Beurskens et al. (1994); and the IAWR and ICPR yearly reports.

tion as their American counterparts from the mid-1970s to the mid-1980s.

A last indicator that the Rhine River is cleaner than the Great Lakes comes from expert opinion. The officials I interviewed that had a grasp of both cases were all of the opinion that the Rhine basin is somewhat less polluted at present than the Great Lakes watershed. The empirical evidence, although admittedly somewhat fragmentary, points to only one conclusion: Great Lakes enterprises have made extensive contributions to the cleanup of the watershed, yet they have stopped short of the massive water protection measures that have been taken by Rhine companies. This conclusion is striking, given the many factors that would have induced one to expect the opposite. These factors are considered below.

### **Domestic Laws and Policies Compared**

A major element of the puzzle described in this article concerns domestic water protection laws. The domestic laws pertaining to the Great Lakes appear to be more strict than those relevant for the Rhine. This reality may lead one to assume erroneously that the effluents of Great Lakes firms have been and are less polluting than the discharges of Rhine firms.

The water protection programs of all involved countries have had the same basic features (Romy 1990; Müller-Brandeck-Bocquet 1996; Bressers & Plettenburg 1997; Jänicke & Weidner 1997; Knoepfel 1997; and Andrews 1997). In all of the countries studied, a firm can only discharge wastewater if it has a permit to do so. This permit lists the conditions of industrial discharges that companies must meet, based on effluent limits and water quality standards.<sup>9</sup> It would have been most appropriate for me to have compared European and American effluent limits. Unfortunately, this was not feasible. A first hurdle is that countries have regulated different pollutants. Effluent limits pertain to categories of chemical substances, and the governments involved have categorized substances differently, which debilitates cross-national comparison. Moreover, in most countries specific effluent guidelines are usually developed for each particular branch of industry. The countries also categorize industries differently, however, making a comparison of effluent limits even more difficult.

Yet, something can still be said about the relative stringency of the domestic water protection programs and the aims of water protection laws. The U.S. Clean Water Act of 1972 has included

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<sup>9</sup> An effluent limit is the maximum amount of a chemical pollutant that wastewater is allowed to contain. A standard denotes either the maximum amount of a particular toxic substance that is allowed in an open water, or the minimum amount of a biological parameter (such as biodiversity) that should prevail in an open water.

more ambitious goals than have the European laws. The 1977 amendments to this Act required that the waters of the United States become “fishable and swimmable” by 1983. They also established a national goal of “zero discharge” of pollution by 1985. Given the highly polluted nature of the American water basins in the 1970s, these were ambitious plans indeed. In addition, the EPA was required to develop effluent standards regardless of their technological or economic achievability (Vogel 1986:162). The aims of the water protection laws in Europe have remained much more modest. Moreover, these laws invariably stipulate that water protection should be balanced against financial interests.

Regarding technology-based standards, under the U.S. Clean Water Act, dischargers were obliged to employ the “best practicable technology currently available” by 1 July 1977, and the “best available technology” after 1 July 1984. These standards are more binding than the European ones. Respectively, they call for the installation of wastewater plants with an “average of the best” and the “best of the best” performance in an industry. The contrast with Europe’s standards is great; for example, before 1990 Germany’s firms only needed to apply “generally accepted technology,” which did not actually impose any regulations on industry (Malle 1991). Since 1990, however, Germany’s firms have been obliged to use the current “state of technology,” which, again, is a rather lax standard (Malle 1991). Similarly relaxed policies exist in the other Rhine countries. Given the huge variations between American and European technology standards, it can safely be assumed that the effluent limits in the United States have been more restricted than those of the Rhine countries because in the United States effluent standards have been calculated with one eye on technology standards.

A last issue that is useful for comparing the strictness of domestic laws is the difference between water quality standards. In 1995 the EPA issued the Water Quality Guidance for the Great Lakes System (as part of the 1990 Great Lakes Critical Program Act). This document harmonizes water quality standards across the Great Lakes states. In 1991, a common set of water quality aims for the Rhine was also adopted by the involved governments. These basin-wide standards were more stringent than anything that had existed before in the individual Rhine countries. The two lists can partly be compared (Table 2).

As the data in Table 2 show, for 7 out of 11 pollutants, water quality standards for the Great Lakes are presently more rigorous than are those for the Rhine basin. This finding is merely suggestive. It does not warrant the conclusion that water quality standards pertaining to the Great Lakes have always been more stringent, because it only compares a limited number of current standards. Still, this finding ties in with the more-ambitious legis-

**Table 2.** Acceptable Levels of 11 Toxic Substances from Water Quality Standards for the U.S. Side of the Great Lakes Compared to Those for the Rhine River

Toxic Substance	Great Lakes Levels (in µg/l)	Rhine River Levels (in µg/l)
arsenic	147.900*	40,000.
chromium	10.980*	100,000.
mercury	0.0018*	500.
dieldrin	0.00041*	0.001
hexachlorobenzene	0.00045*	0.001
endrin	0.036	0.001*
lindane	0.500	0.002*
benzene	310.000	2.000*
DDT	0.00015*	0.001
PCBs	0.0000039*	0.0001
trichloroethylene	370.000	1.000*

SOURCES: 40 CFR (1 July 1990), Ch. 1:640–709; ICPR (1993).

\* Represents stricter standard.

lative aims and the more-stringent technological standards that have also existed in the United States. On the basis of all these factors, I believe that it is safe to assert that the domestic water laws pertaining to the (U.S. side of the) Great Lakes have been stricter than those pertaining to the Rhine.

### International Treaties Compared

The international agreements for the protection of the Great Lakes have been more ambitious than those concerning the Rhine. By 1972 the first Great Lakes Water Quality Agreement had been signed, aimed at the reduction of phosphorus—four years before the Rhine Salt and Chemical Conventions were signed. In 1978, a second, much more comprehensive, Great Lakes Water Quality Agreement came into force, aimed at restoring “the chemical, physical, and biological integrity of the Great Lakes Basin Ecosystem,” and calling for the virtual elimination from the lakes of “any or all persistent toxic substances.” The wording of the 1976 Rhine Chemical and Salt Conventions was much more cautious. For example, the ecosystem concept does not appear in these treaties; it only appears in the Rhine regime with the adoption of the Rhine Action Program in 1987 (ICPR 1987).<sup>10</sup> Furthermore, the Rhine Conventions from 1976 merely

<sup>10</sup> On the 1st of November 1986, fire broke out in a warehouse of Sandoz AG (in Basel, Switzerland), containing 1,351 tons of toxic chemical substances. Fire fighters sprayed millions of liters of water onto the fire, a substantial part of which mixed with the chemicals stored in the warehouse, and flowed into the bordering Rhine. As a result, the river was blotted by a red trail of chemicals forty miles long, which slowly moved downstream from Switzerland to France, Germany, and the Netherlands. All drinking water plants on the river had to be shut down, and dead fish and waterfowl washed up along the river. This incident led to the adoption of the Rhine Action Program in 1987, an informal international program for the protection of the river that was more stringent than the treaties that had previously been adopted.

express the intention to eliminate discharges of a limited black-list of substances and to reduce effluents of an equally limited graylist of pollutants.

### **Amicable Versus Internecine International Relations**

The strict international agreements concerning the Great Lakes sprung from almost frictionless negotiations between the governments of the United States and Canada. Since the early 1970s, these negotiations have taken place in an atmosphere of great cooperation. Again, actions in the Rhine region form a striking contrast. Until 1987, European governments fought ferocious battles over details of this regime (culminating in the Dutch ambassador's recall from Paris in 1979). As a consequence of these struggles, the 1976 Salt and Chemical Conventions were never implemented. It was only after the Sandoz incident in late 1986 that the Rhine states started to implement some international measures (the Rhine Action Program). However, as Thomas Bernauer and Peter Moser (1996) have shown, even the Rhine Action Program did not play a substantial role in the cleanup of the river.

### **Two International Commissions**

The International Joint Commission (IJC) of the United States and Canada has more means for promoting environmental protection measures in the Great Lakes basin than has the International Commission for the Protection of the Rhine (ICPR) for protection of that watershed. First, the powers and responsibilities of the IJC have been more comprehensive than those of the ICPR. The IJC, for example, has veto rights over any project that affects lake levels, and it can exercise its binding arbitration powers in transboundary disputes. Moreover, the IJC has a vastly larger staff and budget (for the latter, on average about eight times that of the ICPR).

### **The Influence of Environmental Organizations**

The environmental organizations concerned with the Great Lakes are better organized and more influential than the ecological groups in the Rhine valley. With the formation of Great Lakes United in 1982, environmental groups reached a unique degree of cooperation. Great Lakes United is an umbrella organization of some 200 citizens' groups involved in the protection of the watershed, through which environmental groups can speak unequivocally to decisionmakers. Such concert among citizens' organizations has been fully absent from the Rhine basin.

Furthermore, Great Lakes environmental associations have had superior access to (inter)governmental decisionmakers.

Under the Administrative Procedures Act, it is obligatory for U.S. agencies to seek public input whenever they contemplate new policies and laws. Therefore, U.S. federal agencies cannot develop new water protection policies without extensive public hearings that also involve environmental groups. Additionally, U.S. environmental organizations have input in decisions regarding firms' effluent permits from state and local regulatory authorities. This is a vital source of influence because U.S. state and local authorities are entrusted with the actual implementation of the Clean Water Act. In none of the Rhine countries has the participation of environmental organizations in domestic decision-making been so firmly ensconced (even though both Dutch and Swiss environmental groups have been consulted regularly in the formation of national water policies).

Internationally, the IJC has offered Great Lakes environmental movements unique opportunities. It has provided them with several platforms, and it organizes biennial conferences at which environmental groups may comment on the progress made by the North American governments under the 1978 Great Lakes Water Quality Agreement. The IJC then reports these comments to the governments and media. Moreover, environmental activists have sat on many IJC advisory boards.

Even more remarkable is the role that three environmental organizations played during the international negotiations over the 1987 amendments to the 1978 Great Lakes Water Quality Agreement. During these negotiations, Great Lakes United, the Sierra Club, and the National Wildlife Federation participated as observers on the U.S. negotiation team. The Canadian diplomatic mission included two members of Great Lakes United as observers (Manno 1994:72). In contrast, the ICPR only started to communicate with environmental groups in 1996.

American environmental organizations have unusual standing in courts of law. When Congress adopted the Clean Water Act in the early 1970s, it allowed environmental organizations and other interest groups to sue polluters, the EPA, and state regulators for not achieving the law's aims. As I show later, Great Lakes environmental organizations have often used these legal possibilities. This is again in contrast to Western Europe, where the possibilities for nongovernmental organizations (NGOs) to take legal action have always been smaller.<sup>11</sup> In sum, environ-

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<sup>11</sup> Again, it is important not to overstate these differences. Various authors (Galanter 1992; Sellers 1995; Wiegand 1996) have pointed out that the legal possibilities for Western European citizens and citizens' groups to sue their governments have increased since the 1980s, partly due to legal developments at the level of the European Community. These authors have also shown that, as a result, litigation rates in several Western European countries have increased, and they have even predicted a convergence between litigation rates within the United States and Western Europe. However, in a convincing response, Robert Kagan (1997) has highlighted a number of institutional and cultural factors that work against a full convergence. In the Rhine case, the Dutch environmental organization, *Stichting Reinwater*, together with the cities of Amsterdam and Rotterdam as

mental groups have had much more scope to influence policies in the Great Lakes basin than in the Rhine region.

### One Epistemic Community

The term “epistemic community” seems to have been invented for application to the Great Lakes case (Haas 1990). An extensive and well-organized epistemic community of law professors and natural and political scientists has advocated the protection of the Great Lakes since the 1970s. Three journals are devoted to publishing their research: the *Journal of Great Lakes Research*, the *Toledo Journal of Great Lakes’ Law, Science, and Policy*, and the *Great Lakes Research Review*. Over the past 25 years, four series of meetings have been convened under the title “Canada–United States Inter-University Seminars for the Great Lakes,” bringing together members of universities, government agencies, and environmental organizations from around the basin to discuss Great Lakes protection issues (Francis & Regier 1995:271). In the Rhine valley, however, I found no traces of an epistemic community.

Together the IJC, the environmental organizations, and the epistemic community have formed a formidable force for the protection of the Great Lakes. Many cross-cutting linkages exist among the three groups of actors.<sup>12</sup> In the Rhine region no such impressive array of “green” forces has ever seen the light of day.

All of the differences between the two cases that I have previously described point only to one conclusion: the industrial discharges from U.S. firms into the Great Lakes must have been less toxic than the effluents of the river Rhine firms into the Rhine. Yet the opposite seems to be the case.

### The Comparability of the Two Cases

One could question the validity of any comparison between the environmental protection of the Rhine and the Great Lakes. The latter are, after all, immense lakes (containing 20% of the world’s supply of fresh water), while the former is not even Europe’s largest river. It could be argued that it does not make sense to compare two watersheds that are so dissimilar in their natural conditions. Nevertheless, I have ensured the comparability of the two cases by limiting the dependent variable of my research to industrial effluents only. As such, the dependent varia-

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well as several Dutch horticulturists, has sued an Alsatian mining company, as well as several German chemical firms, for their contribution to Rhine pollution. See (law professor and *Reinwater* chair) Jesserun d’Oliviera (1989), as well as van Dunné (1991). In my research, however, I did not find that these legal actions have had a large impact on water protection efforts.

<sup>12</sup> Documented in Francis and Regier (1995).



ble includes only human-made effects on the watersheds, and it is not influenced by any natural differences between the basins.<sup>13</sup>

Another way I have ensured the comparability of the two cases is by treating the natural differences between the watersheds as potential explanatory independent variables. One could speculate that the vastness of the Great Lakes has swayed industrialists—surely a bit of pollution from a Great Lakes firm cannot do much harm to such immense waters? Such reasoning might have played a role in creating the differences I found; however, a counterargument also exists. The Great Lakes are not only enormous bodies of water but also are lakes, whereas the Rhine is a river: consequently, substances that enter the lakes stay for a much longer period—191 years for a raindrop falling into Lake Superior as compared to, at most, 77 days for the Rhine. Therefore, there is greater bioaccumulation of pollutants in the Great Lakes than in the Rhine River.

During bioaccumulation, the concentration of chemical substances in living organisms increases manifoldly with every next link in the food chain. The predators on top of the food chain (eagles, salmon), therefore, accumulate a level of pollution in their bodies that is several thousand times higher than the pollution level of the water. Many people in the Great Lakes basin are aware of this process because it has led to a ban on the sale of various fish from the Great Lakes for several decades. The problem is also invariably mentioned in informative brochures concerning the Great Lakes. So, the fact that the Great Lakes are massive lakes, whereas the Rhine is a river, cuts both ways. The vastness of the Great Lakes has perhaps induced business leaders to discount the impact of pollution emanating from their firms, but it is equally plausible that Great Lakes industrialists have been aware of certain environmental problems (such as bioaccumulation and sediment pollution) for some time. It is therefore quite difficult to argue that the natural differences between the two ecosystems have had a strong, unequivocal influence on the dependent variable of this research.

The comparability of the two cases may also be challenged differently. The puzzling elements could be “wished away” by observing that the Rhine is an exceptionally successful case of environmental protection. The Rhine regime has come to be seen as an example for other European attempts to restore aquatic ecosystems.<sup>14</sup> Or perhaps the puzzle is merely a coincidence caused

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<sup>13</sup> To establish the toxicity of the effluents of the Rhine companies I have relied on measurements of the Rhine’s water quality. However, as I argued previously, the measurement systems for the water quality of the Rhine are so fine-grained as to make these measurements a very good indicator of industrial effluents. This proxy is not in any way influenced by the river’s natural conditions. For the Great Lakes case, I have relied on the obligatory public reports by firms of their effluents, as summarized by the EPA for the Great Lakes area.

<sup>14</sup> E.g., *The Washington Post*, 27 March 1996, “‘Sewer of Europe’ Cleans Up Its Act.”

by pairing a successful European effort with an ineffective American attempt. What this argument leaves out is that the protection of the Great Lakes is widely regarded as one of the most successful environmental efforts in the United States. It has been noted that the Great Lakes have been cleaned up to a larger extent than other basins in the United States (Vogel 1986:159). Moreover, the international regime for the Great Lakes has frequently been held as an example for other countries (see, e.g., Renn & Finson 1991). The protection of the lakes has thus been as much a role model in America as the cleanup of the Rhine has been in Europe. These facts make it all the more interesting to compare the two cases.

### **Voluntary Steps Versus Feet-Dragging**

The finding that the industrial discharges into the Great Lakes have remained more toxic than the industrial effluents into the Rhine, despite stricter domestic legislation in the United States, logically entails one, or both, of two conclusions: U.S. water laws must have been badly implemented, and/or Rhine companies must have taken more protection measures than legally required. In reality, both developments have taken place simultaneously.

As can be seen in the comparison that follows, the Rhine companies have taken many voluntary measures to clean up their effluents.<sup>15</sup> In 1991, the ICPR adopted water quality standards for allowable levels of 59 toxics for the Rhine basin that were stricter than the national standards that had hitherto been used. Several of these standards are irrelevant here because they concern chemicals that are solely released by farms. The ICPR and IAWR have assembled data for 22 remaining substances. The data presented in Table 3 compare the strict 1991 standards for the Rhine with the actual water quality in the mid-1980s. As the data show, by the mid-1980s the levels of all but four of 22 priority substances in the Rhine water were lower than the strict standards adopted in 1991. This leaves room for only one conclusion: by the mid-1980s the corporations in the Rhine basin had already reduced their discharges of toxics to a far greater degree than required by the legal norms of the early 1990s.

The effluents of U.S. firms into the Great Lakes have been regulated by the 1972 Clean Water Act. David Vogel (1986:164–66) has documented the slow implementation of this

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<sup>15</sup> By “voluntary measures” I mean firms’ water protection efforts that go beyond existing legal norms. The reasons for these protection measures could invite a squabble about whether these protection efforts were “really” voluntary. For instance, are investments in water protection that flow from norms set by corporatist organizations voluntary measures or not? To circumvent this discussion, I thus strictly delineate my use of the phrase “voluntary measures.”

**Table 3.** Rhine River 1991 Water Quality Standards for Acceptable Levels of 22 Toxic Substances Compared to Actual Levels Detected at Lobith, Netherlands, in the Mid-1980s (in µg/l, unless indicated mg/l)

Toxic Substance	1991 Water Quality Standard	Mid-1980s Actual Levels
mercury	0.5 mg/l	0.00005 mg/l**
cadmium	1.0 mg/l	0.0001 mg/l**
chromium	100.0 mg/l	0.008 mg/l**
copper	50.0 mg/l	0.006 mg/l**
nickel	50.0 mg/l	0.005 mg/l**
zinc	200.0 mg/l	0.048 mg/l**
lead	100.0 mg/l	0.005 mg/l**
arsenic	40.0 mg/l	0.002 mg/l**
DDT (various compositions)	0.001	<0.001* **
endosulfan	0.001	<0.001* **
α-HCH	0.1	<0.01**
γ-HCH	0.002**	0.02
pentachlorophenol	0.1	0.03**
1,2-dichloroethane	1.0**	2.3* **
trichloroethene	1.0	0.1**
trichloromethane	0.6	0.2**
tetrachloromethane	1.0	0.2**
chloronitrobenzene	1.0	between 0.04 and 0.09* **
trichlorobenzene	0.1	0.03* **
hexachlorobenzene	0.001	<0.01**
PCBs	0.0001**	0.006
ammonium-N	200.0**	670.00

SOURCES: ICPR (1983:118–20); RIWA (the Dutch member-organization of the IAWR, 1986:80–85); ICPR (annual report, 1985:196–97).

\* Denotes level from ICPR.

\*\* Denotes lower level.

Act.<sup>16</sup> From the start, the EPA was overwhelmed by the challenges involved in implementing the Clean Water Act. The law called upon the EPA to develop and scientifically justify many detailed quality standards and effluent guidelines. The agency's budget was insufficient to meet these tasks on time.

The regulated firms did not accept the standards laid down by the EPA and the various states' departments, and they reacted by lobbying Congress and the White House and by suing federal and state regulators. (One EPA interviewee estimated that about 90% of all water regulations developed since the 1970s have been challenged in court, and it has taken years to settle some of these cases.) Industry's efforts led to several reversals of the EPA and state policies. And even when the EPA's water regulations were upheld (as was more often the case), the regulators sometimes had to force firms into compliance by strict monitoring and legal action. All of these processes slowed down the implementation of the Clean Water Act.

Corporations from the Great Lakes watershed have been at the forefront of industry's resistance against the water protection efforts of the EPA and the states. Great Lakes executives have often viewed the stipulations of the Clean Water Act as too strict,

<sup>16</sup> Vogel 1986, 164–66; Also Adler, Landman and Cameron 1993.

unfair, and cost-ineffective. They have regarded the EPA's attempts to implement the Act as too heavy-handed.<sup>17</sup> Moreover, Great Lakes executives have acted on their beliefs by taking a leading role in the fight against the Clean Water Act. Both the Great Lakes firms themselves, and their interest associations (such as the American Automobile Manufacturers Association, which is dominated by the Michigan automakers), have battled at various fronts to get the Clean Water Act watered down: in the courts, before Congress, and at the local and state level. One can only conclude that because Great Lakes enterprises have waged prolonged battles to thwart implementation of the Clean Water Act it is unlikely that they have taken more water protection measures than was strictly legally mandated.

In the Rhine basin, however, firms made extensive investments in water protection measures that went far beyond existing legal norms. In contrast, Great Lakes corporations have limited their protection efforts to what was legally required, while at the same time trying to reverse U.S. water laws. True, the water protection norms for the Great Lakes have been stricter than those pertaining to the Rhine River, resulting in a significant cleanup of the Great Lakes. Nevertheless, the extent to which Rhine companies have surpassed legal standards in this issue appears to have resulted in an even greater pollution reduction of the Rhine.

The different inclinations of Rhine and Great Lakes executives to invest in water protection efforts have been rooted in larger processes. The politics of Great Lakes protection have in general been more adversarial than the politics of the Rhine restoration.<sup>18</sup> On the U.S. side of the Great Lakes region, firms, environmental groups, and government agencies have disagreed more vehemently about a greater number of issues. They have not only quarreled about the solutions to the ecological issues but also have remained bitterly divided about the graveness of these problems. For example, according to Great Lakes firms' managers, the ecosystem is currently rather healthy, whereas environmental activists claim that the watershed is in a worse shape than ever. In contrast, in the Rhine area, firms, government agencies, and citizens' groups presently share the view that the waterway has been cleaned up significantly. Similarly, in the early 1970s, concerns about the pollution of the Rhine grew not only among environmental groups but also among the companies lining the river. Furthermore, Great Lakes stakeholders have accused each other of using "bad science." Such arguments have

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<sup>17</sup> The views of Great Lakes corporate leaders on the Clean Water Act are recorded in Allardice et al. (1994). Their findings correspond with the data I obtained through interviewing fifteen representatives of Great Lakes companies and their interest associations.

<sup>18</sup> Based on my interview materials.

less frequently been heard in the Rhine region. Other sources of conflict and distrust regarding this issue have also abounded more in the Great Lakes region than in the Rhine basin.

My argument is not that the politics of the Rhine protection efforts have been wonderfully harmonious—many disagreements have indeed existed. However, compared to the Great Lakes, these disagreements have been more contained. The comparatively antagonistic processes in the Great Lakes region have been intertwined with the lesser willingness of Great Lakes companies to invest in water protection. Doubting the scientific rationale of environmental measures, viewing effluent limits as too strict, and expecting environmental groups and the EPA to care only for environmental concerns, Great Lakes enterprises have frequently decided to keep their antipollution measures limited—at least as compared to those of Rhine corporations.

### **A Historical-Institutional Answer**

The preceding begs the question: What has made the environmental politics of the Great Lakes more adversarial than the environmental politics of the Rhine? An answer must largely be sought in differences between the domestic and international institutions that have affected actors in both watersheds. I view these institutional differences through the prism of the historical version of new institutionalism.<sup>19</sup>

According to the new institutionalism, institutions represent self-reinforcing patterns of collective thought and practice.<sup>20</sup> They have at least two functions: (1) They distribute power resources among organizations; and (2) they shape the perspectives and interests of actors. The rational choice version of new institutionalism focuses on the first function, and the sociological version concentrates mainly on the second function. Historical institutionalism usually considers both functions.

Most often highlighted by historical institutionalism are the patterns of thought and practice that structure the relationships among the actors within a polity or economy in a given period. These actors usually include government departments, political parties, the courts, interest associations, citizens' groups, experts, and so on. I follow John Ikenberry's (1988:226) understanding of institutions as ranging from "specific characteristics of government institutions, to the more overarching structures of [the] state, to the nation's normative order."

My explanation of why the politics of water protection have been more adversarial in the Great Lakes basin than in the Rhine

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<sup>19</sup> The best introduction to historical institutionalism is Thelen & Steinmo (1992). See also Katzenstein (1978); Hall (1986); Steinmo et al. (1992); and Steinmo (1993).

<sup>20</sup> Overviews of this literature are March & Olsen (1989); Hall & Taylor (1996); Immergut (1998); and Peters (1999).

valley begins with the normative orders of the nations in which both watersheds are located. I argue that there are enduring differences between the moralities of the people of Western Europe and the United States. These differences go some way toward explaining the existence of adversarial water protection politics in both watersheds, but not all the way, as the case of Switzerland shows. The normative order of the Swiss nation is exceptional among the Rhine countries, and it is remarkably similar to the values adhered to by many Americans. Yet, the Swiss have enjoyed highly consensual relationships in the domain of water protection. This behavior suggests that explanatory factors other than overarching moralities must be important as well in accounting for adversarial politics regarding the protection of watersheds. These other factors are to be found at both the domestic and the international level.

At the domestic plane, there are a number of differences between the state-society arrangements of the United States and those of the Rhine countries. These arrangements have shaped the relations among the executive and judiciary branches, Parliament, business corporations, and environmental groups quite differently on both sides of the Atlantic. They have also tended to make U.S. water protection politics more conflictual than the water protection politics within the Rhine countries. The actors both in the Great Lakes and the Rhine watersheds have been severely affected by this difference. The Great Lakes basin has actually provided the major battlefield on which the struggles of American water politics have been decided. National business associations and environmental groups have frequently challenged the implementation of the Clean Water Act in the Great Lakes region. Moreover, Great Lakes companies and environmental groups have often taken the lead in shooting down U.S. water legislation. The state-society arrangements that have made U.S. water politics adversarial have found their fullest expression in the politics of the protection of the Great Lakes.

These domestic institutional differences have been complemented by the differences among the international regimes for the protection of the Rhine and the Great Lakes. The activities of the IJC have especially added fuel to the fires of the Great Lakes protection politics. International regime differences therefore form the last part of my explanation.

In sum, my historical-institutional account consists of three mutually supportive arguments: two domestic (alternative moral orders and divergent state-society arrangements), and one international (regime differences). Together, they stress the fact that institutions have made Great Lakes protection politics more adversarial than Rhine protection politics. This polarization in turn has also made Great Lakes enterprises less willing than Rhine companies to invest in water protection, despite the stricter legis-

lation pertaining to the former. My explanation is clearly not parsimonious: It combines a variety of contingent, historically specific, interrelated explanatory factors.

I make no claim to originality in employing this framework. The explanatory part of my research borrows from, and is in general accordance with, a number of other comparative studies of regulation—in particular that of Brickman et al. (1985); Badaracco (1985); Wilson (1985); Vogel (1986); Boyle (1998); Wallace (1995); as well as Kagan and Axelrad (1997).

## The Domestic Level, Part 1: American Exceptionalism

More than the people of other nations, Americans value liberty, egalitarianism, individualism, populism, and laissez-faire (Lipset 1996:31). Together these traits form “American exceptionalism”—a phrase coined by de Tocqueville in 1835.<sup>21</sup> Despite many other cultural changes, American exceptionalism has been in place for several centuries. One fiery passion underlies all elements of American exceptionalism: a dislike and distrust of central government. How can this anti-authoritarian thrust be linked to the adversarial nature of water protection politics in the United States, including the Great Lakes states?

American exceptionalism holds up the ideal of rugged individualism. “Standing up for yourself” and “holding your own” are cultural traits that are especially valued in the United States. These beliefs are not particularly conducive for dialogue among organizations with divergent views of environmental issues. Also, they do not stimulate acceptance of government policies. In Huntington’s view,

The ideological pluralism in Europe also means that liberal, democratic, and egalitarian norms are generally weaker in European countries than they are in the United States and that nonliberal, nondemocratic norms stressing hierarchy, authority and deference are stronger. Comparisons of political culture consistently document these differences (1981:56).

The anti-authoritarian values of American exceptionalism have most fervently been adhered to within the U.S. business community, as David Vogel (1996) has shown: “[T]he most characteristic, distinctive and persistent belief of American corporate executives is an underlying suspicion and mistrust of government” (p. 29). Actually, “businessmen are more anti-statist than virtually any other major interest in American society” (Vogel 1996:48). This anti-statism has also prevailed among Great Lakes business people. In their eyes, water protection efforts should only proceed on a voluntary basis, and should not be imposed by

<sup>21</sup> Besides de Tocqueville (1991 [1835]), other writings on American exceptionalism include those by Hartz (1955); Huntington (1981); Shafer (1991); Wildavsky (1991); Elazar (1994); and Lipset (1996).

government.<sup>22</sup> During my interviews with environmental organizations, it appeared that these groups, too, were distrustful of government—fearful of the EPA and state governments “selling out” to, and “being captured” by, Great Lakes enterprises. American exceptionalism has played its part in setting off the antagonistic politics of the protection of the Great Lakes by heightening suspicion of government among Great Lakes executives and environmentalists and by nourishing distrust among the involved organizations.

Is this normative order enough to explain the adversarial nature of water protection politics in the Great Lakes area? The case of Switzerland suggests that this may not be so. Swiss society is characterized by a normative order remarkably akin to that of the United States: The Swiss have opposed central authority as intensely as have U.S. citizens. This opposition is apparent in many ways.<sup>23</sup> To name only a few examples, the Swiss government has never had much involvement in the economy—taxes have remained low, social security has remained limited, and the Swiss central bank is still in private hands (Katzenstein 1984:110). Furthermore, the Swiss people have used various forms of direct democracy to an even greater extent than have the citizens of the United States. Yet, despite a comparable normative order, environmental politics in Switzerland have been highly consensual, which shows that it may be possible to combine an antihierarchical morality with state-society institutions that enable consensual environmental politics to flourish. An anti-authoritarian stance is therefore not sufficient for the emergence of adversarial environmental politics. A full explanation also needs to consider the specific historical institutions that shape the relations among the executive and judiciary branches, the legislature, business organizations, and environmental groups in the involved countries (McRae 1997). These domestic institutions have been organized quite differently in the United States than in the Rhine countries. These differences have made the water politics of the Great Lakes more antagonistic than those of the Rhine.

## The Domestic Level, Part 2: State-Society Arrangements

### The Executive and the Judiciary

The antagonism among organizations involved in the water politics of the Great Lakes has been fueled by the ample opportunities that nongovernmental actors have had to challenge laws

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<sup>22</sup> See various position papers of the Council of the Great Lakes Industries (1996, 1997). Verweij, Marco (1997) Interviews of various organizations, in the collection of the author.

<sup>23</sup> Spelled out in Blankart (1993). See also the other contributions to Elazar (1993), in the special issue of *Publius*.



and administrative policies through the courts (Wilson 1985:162). In the Rhine valley these opportunities have been few.

Since the 1960s, major pieces of legislation adopted by U.S. Congress have frequently come with a built-in opportunity for citizens and private organizations to enforce the implementation of these laws through the courts.<sup>24</sup> Both Republican and Democratic legislators have used this construction as a way out of the dilemma of how to establish far-reaching, nationwide social change in a federal polity where power is dispersed among many layers of government and where anti-centralist feelings run high. The Clean Water Act is a good example. The Act allows private groups to sue the EPA, state agencies, as well as private companies for not implementing the law. In this way, Congress was able to justify calls for stringent national water protection norms, while still keeping the EPA's budget and size within certain bounds. In the Rhine countries, however, the right of private organizations to legally challenge the implementation of water protection policies has remained less than that of people in the United States, despite a considerable growth in European litigation rates in the past 15 years (Blankenburg 1996; Blankenburg & Bruinsma 1991; Holland 1988a, 1988b; Jacob 1996; Knoepfel 1997; Provine 1996; and Rademaker 1988). How has this contributed to more adversarial environmental politics in America? First, American corporations can always seek to thwart the implementation of these policies in court. For the duration of these court cases, firms can withhold investments in environmental protection. This practice is much resented by the EPA and state environmental departments, which also run the risk of being sued by citizens' organizations for not meeting environmental goals on time. For instance, some 90% of the EPA's effluent limits have been challenged in court. Furthermore, court cases themselves are not exactly conducive for a coming together of minds. During lawsuits it is beneficial for parties to present their views as strongly as possible. It is not useful to show any sympathy for the opinions of the opposite party. In court, business representatives will testify that there is no scientific basis whatsoever for the government's protection policies. The EPA and state officials will often argue the exact opposite.

The Great Lakes basin has been at the center of much of this legal haggling. To begin with, nationwide business associations have often sought to influence federal water policies through court cases dealing with the implications of national laws for the Great Lakes basin.<sup>25</sup> It should not be surprising that national bus-

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<sup>24</sup> This part relies heavily on Kagan (1996).

<sup>25</sup> For example, *Reynolds Metals Company and U.S. Brewers Association v. the Environmental Protection Agency (EPA)*, 760 F.2d 549 (U.S. App. D.C., 1985); *American Iron and Steel Institute v. the EPA*, 325 (U.S. App. D.C. 76, 1997); *American Forest and Paper Association v. the EPA*, 137 (U.S. App. D.C., 1998).

ness associations have frequently focused on the Great Lakes. More than half of the 500 largest U.S. industrial companies are located in the watershed, thus Great Lakes firms have had a major say in such business associations as the American Automobile Manufacturers Association, the American Iron and Steel Institute, the American Forest and Paper Association, and the Chemical Manufacturers Association. Furthermore, Great Lakes companies themselves have often legally challenged federal and state water policies.<sup>26</sup> Great Lakes enterprises have therefore both directly and indirectly led much of the legal opposition of business against the Clean Water Act.

Much the same can be said of American environmental organizations. They as well have frequently looked upon the Great Lakes as a major battleground on which to decide the fate of U.S. water legislation. Both local and national environmental organizations have often sued the EPA and state agencies for not having enforced the Clean Water Act strictly enough in the Great Lakes basin.<sup>27</sup> Environmental groups (especially the Atlantic States Legal Foundation) have also indicted Great Lakes firms for reportedly not having complied with wastewater legislation.<sup>28</sup> The number of these court cases illustrates that the Great Lakes have been at the very center of the water protection battles among American firms, federal and state agencies, and citizens' groups. The ample opportunities that these actors have had for suing each other have deepened the rifts among them.

### The Executive and the Legislature

The institutions shaping the relations between the executive and the legislature in the United States are also different from those in the Rhine states. In particular, in the United States there

<sup>26</sup> *Niagra of Wisconsin Paper Corporation v. Department of Natural Resources*, 84 Wis. 2d 32 (Supreme Court of Wisconsin, 1978); *Philips Plastics Corporation v. Department of Natural Resources*, 98 Wis. 2d 524 (Courts of Appeals of Wisconsin, 1980); *Ford Motor Company v. the Environmental Protection Agency (EPA)*, 718 F.2d 55 (U.S. App., 1983); *Mobil Oil Corporation v. the EPA*, 716 F.2d 1187 (U.S. App., 1983); *Cerro Copper Products Company v. William D. Ruckelshaus, Administrator, EPA*, 766 F.2d 1060, (U.S. App., 1985); *South Holland Metal Finishing Company v. Carol Browner, Administrator, EPA*, 97 F.3d (U.S. App., 1996); *Great Lakes Chemical Corporation v. the EPA*, (U.S. App., 1999); *Spitzer Great Lakes Ltd. v. the EPA*, 173 F.3d 412 (U.S. App., 1999).

<sup>27</sup> *Citizens for a Better Environment et al. v. EPA et al.*, 231 (U.S. App. D.C. 79, 1983); *Friends of the Chrystal River et al. v. EPA*, 794 F. Supp. 674 (U.S. Dist. Lexis 11947; 1992); *Sierra Club et al. v. EPA*, 843 F. Supp. 1304 (U.S. Dist. Lexis 19126, 1993); *Raymond Proffitt Foundation v. EPA*, 930 F. Supp. 1088 (U.S. Dist. Lexis 4872, 1996); *National Wildlife Federation et al. v. EPA*, 936 F. Supp. 435 (U.S. Dist. Lexis 8992, 1996); *National Audubon Society v. Minnesota Pollution Control Agency*, 569 N.W.2d. 211 (Courts of Appeal of Minnesota, 1997); *Friends of the Chrystal River v. Michigan Department of Natural Resources* 459 Mich. 895 (Supreme Court of Michigan, 1998).

<sup>28</sup> For example, *Atlantic States Legal Foundation v. Universal Tool & Stamping Co.*, 786 F. Supp. 743 (U.S. Dist. Lexis 2942, 1992); *Atlantic States Legal Foundation v. Eastman Kodak Co.*, 12 F.3d 353 (U.S. App. Lexis 32711, 1993); *Atlantic States Legal Foundation v. Stroh Die Casting Co.*, 116 F.3d 814 (U.S. Dist. Lexis 14526, 1997).

is a presidential system, whereas most of the Rhine countries have a parliamentary system (Lijphart 1992). More accurately, the United States has a “pure” presidential system, the Netherlands and Germany have “pure” parliamentary systems, and the governmental systems of France and Switzerland are hybrids of these models.

A presidential system displays the following characteristics: (1) the executive and the legislature are separately chosen by the public; (2) the government cannot be forced to resign with a parliamentary vote of no confidence; and (3) executive power is concentrated in one person. A presidential system is largely based on the ideal of a separation of powers: it pits government against Parliament.

A parliamentary system has the following traits: (1) the government is chosen by the popularly elected Parliament; (2) the legislature can force the government to resign; (3) executive power is exercised in a collegial manner, that is, ministers take decisions jointly. In a parliamentary system, the executive and the legislature cooperate more closely.

In several ways having a presidential system stokes the fires of environmental politics higher. First, in a presidential system parliamentarians bear no responsibility for, and therefore tend to be less concerned about, the implementation of legislation. In fact, if government fails to achieve the aims of legislators, the latter acquires a stick with which to beat the former. Thus it can be an attractive strategy to adopt laws that incorporate impractical, extreme measures, particularly when the parliamentary majority belongs to a different political party than the executive. Such lack of parliamentary responsibility was taken to extremes with the adoption of the U.S. Clean Water Act by the Democratic majority in Congress in 1972. This Act included “stringent timetables that ranged between the merely unrealistic and the wholly fantastic”—against the will of President Nixon (Brickman et al. 1985:72). As a consequence, Great Lakes firms were set against the Clean Water Act right from the start (Allardice et al. 1994).

Second, a presidential system gives interest groups another opportunity to challenge governmental policies. In presidential systems there tends to be a struggle for power between the executive and the legislature. In the United States, congressional committees try to keep a tight rein on government departments by holding frequent reviews of their policies. Private organizations, such as business associations and citizens’ groups, lobby members of Congress, and testify before the various congressional committees. Thus, these groups have another chance to get governmental decisions repealed, which tends to increase the acrimony between governmental and nongovernmental actors (Wilson 1985:162). These processes have affected U.S. water protection politics as well. The Clean Water Act has been regu-

larly reviewed by the U.S. Senate. During the reviews, environmental groups, business representatives, and EPA officials have offered their opinions. As with court cases, Senate hearings induce organizations to present their views as strongly as possible—thus deepening their divisions. Companies and environmental groups from the Great Lakes watershed have played a dominant role in Senate hearings on water legislation. Both camps have frequently offered their opposite viewpoints in strongly worded testimonies to the Senate.<sup>29</sup> Under parliamentary systems, however, private actors have fewer opportunities to influence government policy through the legislature, because in these systems public power is concentrated more in the executive than the legislature.

A last argument relates to executive-executive relations. In parliamentary systems, policy decisions are typically taken after a lengthy process of consultation among various ministries. This interministerial consultation reassures private actors that their wishes will be considered. In both Germany and Holland, the Ministry of Economic Affairs has defended the viewpoints of business associations in the formation of domestic and international policies concerning the Rhine. Likewise, the Dutch and German Environment Ministries have usually sided more with environmental groups in the formation of Rhine policies. This has further reduced the need of private actors in Germany and the Netherlands to agitate against government policies affecting the Rhine.

In presidential systems, government agencies develop their policies in relative isolation from each other, and then ask for permission to implement these policies from the head of government. The EPA seldom negotiates with other government agencies over its proposed effluent limits; it instead concentrates on how to sell strict guidelines to the president. This practice has also polarized American and Great Lakes protection politics.

The preceding arguments are based on the fact that the polity of the United States has resembled a pure presidential model, whereas those of the Netherlands and Germany have approached a pure parliamentary model. These arguments apply less to Switzerland and France, as the polities of these countries are hybrids of the two types. However, because of the specifics of these hybrids, neither the Swiss nor the French polity offers private actors much chance to seek redress of government policies in Parliament.

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<sup>29</sup> See, e.g., the testimonies of various Great Lakes firms and environmental organizations during two hearings of the U.S. Senate on proposed amendments of water laws: *Amending the Clean Water Act: Hearings before the Subcommittee on Environmental Pollution*, 27–28 March 1985; and *Water Pollution Prevention and Control: Hearing before the Subcommittee on Environmental Protection*, 21 May–18 July 1991.

## The Executive and Business Corporations

A missing link in my explanation concerns the institutions that shape the direct contacts among governmental departments and corporations in the United States and the Rhine countries. These links have been organized quite differently on both sides of the Atlantic. First, I consider the effects on both watersheds of the general ways in which business-government relations have been organized in the two areas. Thereafter, I look at the impact of these relationships on the two basins in the field of environmental protection.

In many European countries, corporatism has long reigned. According to Philippe Schmitter (1979:13), corporatism is

a system of interest representation in which the constituent units are organized into a limited number of singular, compulsory, non-competitive, hierarchically ordered and functionally differentiated categories, recognized or licensed (if not created) by the state and granted a deliberate representational monopoly within their respective categories in exchange for observing certain controls on their selection of leaders and articulation of demands and supports.

In a corporatist economy, private actors are politically represented by a limited number of large and relatively stable interest associations. Firms are represented by employers' organizations, employees by labor unions. Their negotiations take place under the watchful eye of the government. The interest associations typically try to find a consensus that is acceptable to their own members and the government. As such, interest associations in a corporatist economy often "deputize" for the executive. The corporatist model is essentially hierarchical. Corporatists base "their faith either on the superior wisdom of an authoritarian leader or the enlightened foresight of technocratic planners" (Schmitter 1979:15).

The details of the corporatist model have differed from country to country and time to time (Schmitter 1989; Schmitter & Grote 1997; Lehbruch 1996). Despite these fluctuations, the economies of Germany, the Netherlands, and Switzerland have usually been seen as examples of the corporatist model, certainly since the end of World War II.<sup>30</sup> How does this tie in with the voluntary investments in water protection made by firms in the Rhine area? Corporatism has created the organizational means through which industrywide environmental policies can be coordinated. The business associations that are an essential part of any corporatist system can fulfill such a role; this has been especially important in Germany. Both the German Association of the

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<sup>30</sup> Lehbruch (1993, 1996); Katzenstein (1984); Lijphart & Crepaz (1991). Swiss corporatism has been a special case, as it has functioned without a strong central government (Kriesi 1996:540).

Chemical Industry (VCI) and the Abwassertechnische Vereinigung (the professional association of German wastewater specialists) have been motors behind the massive investments in water and air protection undertaken by the chemical firms in Germany (Allen 1989:174–76). For instance, the VCI has set up a program through which the large chemical concerns have helped smaller firms to purify their discharges. This program has consisted largely of passing on technical knowledge concerning purification methods and substitutes for pollutants. The VCI has also done much to raise environmental awareness in the German chemical industry. The Abwassertechnische Vereinigung has defined standards for effluents and water quality that have usually been adopted by firms and cities (Rüdig & Kraemer 1994:63). These associations have not relied as much on formal sanctions. Firms unwilling to implement their plans have not been penalized or ostracized in any way. Instead, it is the technical expertise that these organizations embody, as well as the esprit de corps that they foster among water specialists, that makes their members acquiesce—at least in a normative order that does not lead people to distrust every manifestation of authority. The importance of the activities of these professional associations for the cleanup of the Rhine becomes clear when one considers that Germany's largest chemical firms are located on the Rhine waterway.

Corporatism has never taken root in America, being too much based on hierarchical principles (Wilson 1982). Instead, the political economy of the United States has been characterized by pluralism. Schmitter (1979:15) defines pluralism as

a system of interest representation in which the constituent units are organized into an unspecified number of multiple, voluntary, competitive, non-hierarchically ordered and self-determined (as to type or scope of interest) categories which are not specially licensed, recognized, subsidized, created or otherwise controlled in leadership selection or interest articulation by the state and which do not exercise a monopoly of representational activity with their respective categories.

Under pluralism, individual actors (be they firms or persons) fend for themselves. They form temporary alliances with other actors if this seems to further their self-interest. But the alliance immediately unravels the moment it no longer serves this self-interest. Thinking and acting in terms of a "group interest" is much less developed under pluralism than in a corporatist system, and decisionmaking is highly fragmented.

There are two ways in which the U.S. pluralist system of interest representation helps to explain why U.S. firms in the Great Lakes watershed have balked at making investments in water protection measures. First, a pluralist system induces actors to think in individualistic, rather than social, terms. Investment in water

protection efforts undertaken by a firm benefits all those who live in the watershed. The costs of the investment, however, fall disproportionately on the firm. From a narrow self-interested point of view, this is a problem. Standard economic analysis (based on the assumption of self-interested behavior) would predict under-investment. However, if actors thought more in social terms there would be less under-investment. Therefore, to the extent that a pluralist system strengthens thinking in terms of narrow self-interest, it also diminishes firms' willingness to invest in environmental protection. Second, under pluralism the organizational basis for voluntary industrywide water protection programs is lacking. In the Great Lakes basin, no central industry association has had enough authority to induce firms to invest in water protection programs. The Council of Great Lakes Industries only started work in the early 1990s, and has remained a tiny organization, capable of representing the Great Lakes firms in political forums, but not strong enough to influence the environmental stances of the companies.

The manner in which water protection policies have evolved in the Rhine countries is a long haul from the extensive concert between public and private organizations that is characteristic of corporatism.<sup>31</sup> By and large the Rhine states have used "command-and-control" approaches to environmental protection (Knoepfel 1997:180).<sup>32</sup> They have attempted to force industries to invest in aquatic protection by adopting water quality standards and effluent limits. In principle, Rhine firms should have been able to obtain discharge permits only if their effluents met the legally required standards. The politics of water protection in the Rhine countries have only been "consensual" in comparison to the extremely adversarial water protection politics in the United States.

The U.S. environmental agencies have also opted for a strict regulatory policy approach (Andrews 1997:28–29).<sup>33</sup> But not every command-and-control policy equals the other. Clearly, the U.S. approach to water protection has been much more rigid, top-down, and legalistic than the water policies adopted in the Rhine countries (Brickman et al. 1985:75). For example, U.S. industry's views have carried less weight in environmental decision-making (at both the federal and state levels) than has been the case in the Rhine valley. Moreover, U.S. pollution values and technological standards have been more detailed and more strin-

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<sup>31</sup> The previously mentioned effects of corporatism on the protection of the Rhine have therefore only been *indirect*: through familiarizing business leaders with the idea that firms also have social responsibilities, and through creating professional associations strong enough to influence and coordinate the environmental policies of firms.

<sup>32</sup> Jänicke & Weidner (1997:139); Bressers & Plettenburg (1997:115–16); Müller-Brandeck-Bocquet (1996:37–38).

<sup>33</sup> On the EPA's handling of Great Lakes firms, see Allardice et al. (1994: 357–58).

gent than European ones. Finally, in the Rhine countries, firms temporarily unable to fulfill their legal obligations toward the environment have sometimes been able to discuss this problem with the authorities. Government officials from these countries have certainly not threatened firms with severe penalties. In similar cases in the United States, the EPA and state environmental departments have shown less understanding. U.S. authorities have sometimes handed out heavy fines to firms and at times have even sought imprisonment for business executives who have not met environmental standards.<sup>34</sup> Again, the Great Lakes ecosystem has been in the thick of all this action. For instance, the EPA has often sued Great Lakes firms for not having complied with national water legislation.<sup>35</sup>

Another factor has also made the command-and-control policies of the Rhine states less oppressive than the U.S. command-and-control policies. In two Rhine countries the governments have ceased favoring a command-and-control approach to water protection. Since the mid-1980s, the Swiss and Dutch governments have put more and more emphasis on voluntary programs (Bressers & Plettenburg 1997:116; Knoepfel 1997:181).

A final development that has softened the impact of the command-and-control policies in the Rhine countries concerns the actual implementation of these policies. In both the Netherlands and France a gap has existed between the way in which water protection has been formulated and the way in which it has been implemented. The *policymakers* in both countries have preferred strict regulation of polluters. They have formulated national norms to be implemented in stringent protection policies. But the *policy-implementers* in both France and the Netherlands have often diverged from these strict controls. In the Netherlands, the civil servants responsible for implementing water policies have realized that they simply do not have the financial means to systematically control the discharges of firms. Moreover, they have experienced great difficulties in providing evidence of environmental infringements. For these reasons, Dutch *policy-implementers* have opted for a more flexible approach than the strict command-and-control policies favored by central policymakers (Bressers & Plettenburg 1997:116).

In France, the local *préfet* has been responsible for issuing discharge permits and implementing centrally developed environmental policies. The *préfet* is the local representative of not only the Ministry of the Environment but also of other governmental

<sup>34</sup> Vogel (1986:163): "Violators of the government's water-pollution standards . . . could be fined up to \$25,000 a day and sentenced to one year in prison."

<sup>35</sup> See, e.g., *United States v. Bethlehem Steel Corporation* (U.S. District Lexis 10482, 1993); *United States v. Great Lakes Castings Corporation* (U.S. District Lexis 5745, 1994); *United States v. GK Technologies and Indiana Steel & Wire Co.* (U.S. District Lexis 3783, 1997).



departments. As such, he or she is expected to strike a balance among the opposing interests of the various departments. For example, on the one hand the *préfet* has to implement water protection policies in his or her region, but on the other hand he or she also has to take into account the local needs for industry and employment. Legally, the *préfet* can diverge from national environmental norms on the grounds of these other public needs. Moreover, the *préfet* is not held to enforce national water quality standards if, in his or her view, the local environmental conditions do not require this. As a result, in France the centrally adopted environmental standards have often become watered down locally (Müller-Brandeck-Bocquet 1996:62, 73–87). This has played an important role in the *basin de l'eau Rhin-Meuse* (the administrative region of France through which the Rhine flows). The *préfet* responsible there has been quite sensitive to the needs of local industries. For example, when on various occasions in the 1980s French courts ruled that an effluent permit given to a major Alsatian mining company should be withdrawn, the *préfet* was quick to do so, and even quicker to issue a new, equally broad permit to the company (Jesserun d'Oliviera 1989).

Firms usually resent command-and-control policies. The strict regulatory approach with which the EPA and state agencies have tried to force Great Lakes firms to comply with the Clean Water Act has therefore contributed significantly to the distrust that has characterized the environmental protection of the Great Lakes.

### **The Executive and Environmental Organizations**

The influence that environmental groups have had in the Rhine valley has differed from country to country. In Switzerland, environmental groups have had the greatest opportunities for effecting policy change, in France the least (Kriesi et al. 1992). In the United States, however, environmental groups have had many more chances to do so. Besides the challenges that U.S. environmental groups can launch through the courts, Congress, and the White House, the EPA has offered them ample opportunities to directly affect its policies. The EPA is obliged to invite citizens' groups to comment on proposed legislation. It has often favored the viewpoints of environmental organizations over those of corporations. Unsurprisingly, the business community has felt "exposed" by the influence environmental organizations have sometimes been able to exert on the EPA and has sought to fight back (Vogel 1996:319). In the Rhine countries, government officials have been less impressed with the arguments of environmental groups and have tended to be more neutral—thus easing the qualms of corporations. The institutions that have regulated the contacts between the EPA and U.S. environmental organiza-

tions have therefore been an additional source of the distrust and disagreement that have plagued the protection politics of the Great Lakes—next to the institutions that regulate the relations among the executive, judiciary, legislature, and business community.

### **Companies and Companies**

Thus far I have made the argument that alternative state-society arrangements have made the politics of water protection more adversarial in the Great Lakes basin than in the Rhine watershed. This situation has reduced the willingness of Great Lakes firms to invest in water protection. In addition to these arguments one should consider the regional variations of relations within and between companies, the topic of the “capitalism versus capitalism” literature, which usually distinguishes two rival forms of capitalism.<sup>36</sup> One type of capitalism (sometimes called the “Rhine model”) stresses a consensual, group-oriented organization of the economy and is most often seen as being exemplified by Germany and Japan, and to a somewhat lesser extent by Holland and Switzerland as well. The other capitalism (“Anglo-Saxon capitalism”) is based more on individualistic and antagonistic principles and is represented most by the United States.

Capitalism versus capitalism literature highlights two differences among the business communities of the United States and the Rhine countries that are relevant for helping to solve the puzzling elements of this article: the first concerning the relationships among industrial concerns and their financiers, the second the relationships among management and employees.

U.S. firms raise money more on the stock market, whereas firms in the Rhine countries rely more on self-financing and bank loans, making U.S. companies more beholden to stockholders, who often have less of a stake in the survival or social standing of the company and who are usually more interested in the current value of their earnings. To keep their stockholders happy, U.S. firms are therefore induced to maximize short-term financial profits. Particularly since the 1980s, this tendency has been strengthened by the phenomena of “corporate raiding” and “hostile takeovers,” involving the involuntary takeover of a firm (through the stock market), usually followed by the sacking of its management. These phenomena have focused the minds of U.S. corporate leaders even more on short-term profits. Water protection efforts, which involve long-term planning and financial sacrifices, are less a priority under these circumstances.

In the Rhine countries, firms finance their activities more through large banks than through the stock market. Also, the

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<sup>36</sup> See Thurow (1992); Hart (1992); Albert (1993); Hollingsworth & Boyer (1997); and Boyer (forthcoming).

shares they *have* issued have often ended up in the hands of the very same banks. The large banks in the Rhine countries (especially in Germany) have therefore occupied a central role in the functioning of enterprises. Bankers have tended to believe that the profitability of companies depends on long-term planning and often entails short-term losses. They have been much less willing to sell and buy domestic assets at short notice. Thus, the banks have sheltered firms from hostile takeovers. Furthermore, particularly in Germany, banks and companies from various sectors have joined together—holding on to each other's shares and providing financial help in hard times. Many German companies from the Rhine basin have been part of such corporate groups (Liedtke 1999). In the Netherlands and Switzerland, such groups have been less prevalent. Dutch firms, however, have been protected from hostile takeovers by extensive legal prohibitions and Swiss firms by restrictive rules governing shareholders' voting rights. All of this has freed Rhine companies somewhat from a single-minded pursuit of short-term profit. It has also enabled extensive voluntary investments in water protection efforts in the Rhine basin, as these investments have entailed long-term planning and reduced profits. The water protection efforts of the chemical giants Bayer AG and Hoechst AG in particular have been facilitated by this lesser dependence on the stock market. Both of these concerns have taken great risks in their efforts to revolutionize wastewater purification technology. Bayer's "tower biology" and the "Bio-Hochreaktor" of Hoechst made reductions in water pollution possible that had hitherto been unthinkable. It seems unlikely that these enterprises could have taken the huge risks involved in developing their technologies if they had not been sheltered from hostile takeovers and from shareholders mainly interested in short-term profits.

The second relevant difference among the rival capitalisms is the relationships among management and employees. Again, in the Rhine countries (except France) these relationships have been more convivial and have been oriented more toward the long term than in the United States. In America, labor is seen as just another commodity. It is offered and sold without much ado, which leads to a high degree of job turnover in the United States. High turnovers, in turn, tend to make work relations in U.S. companies more impersonal and geared toward the short term.<sup>37</sup> One manifestation of the Rhine area countries' long-term focus is the far greater influence that employees have on company policy in these countries. This influence has been important for the cleanup of the Rhine. Asked why their firms had invested in water protection measures, the representatives of Dutch, Ger-

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<sup>37</sup> An exception to these practices is usually made for the working conditions within U.S. multinationals.

man, and Swiss companies in the Rhine watershed offered another motivation in addition to stating their wish to do the (socially) right thing. They said that their employees (most of whom live in the watershed) had also been in favor of such a course. Thus the greater willingness of corporate leaders to take into account the views of their employees in the Rhine model of capitalism also constitutes an important part of the solution to the riddle of this article.

### **The International Level: The Role of the International Joint Commission**

The third and last part of my explanation of why the Rhine watershed is cleaner than the Great Lakes (when one would expect the opposite to be the case) concerns the international level. The international regime for the protection of the Great Lakes has diverged in several respects from the international regime for the Rhine. These regime differences have been especially shaped by the International Joint Commission (IJC), and have amplified the antagonism among the organizations involved in the pollution and protection of the Great Lakes. Thus the international regime for the Great Lakes has further widened the rifts among those concerned that have been opened up by domestic institutions.

In a number of ways the IJC has stoked the fires of the environmental politics of the Great Lakes even higher. It has done so, first, through its elaborate public participation programs. Every two years, the IJC brings out a new "Biennial Report on Great Lakes Water Quality." In these reports the IJC comments on the ongoing implementation of the 1978 Great Lakes Water Quality Agreement by the U.S. and Canadian governments. Before the IJC writes a biennial report, it organizes a biennial meeting at which stakeholders can present to the Commission their views on the protection of the Great Lakes. Usually, thousands of representatives from nongovernmental organizations attend these meetings. The opinions of people attending these conferences often find their way into the biennial reports. Sometimes, the IJC also invites nongovernmental actors to serve on its advisory boards. The IJC is very proud of its public participation processes; they are indeed unique in the world. However, this public participation has seldom consisted of input by corporate leaders. Representatives of firms only began coming to the biennial meetings in the 1990s. At both the 1991 and the 1993 conferences, they were shouted down by a hostile crowd of environmentalists. Also, business representatives have seldom served on the advisory boards of the IJC.

A second way in which the International Joint Commission has polarized the Great Lakes regime is through its recommen-

dations to the North American governments. The 1978 Great Lakes Water Quality Agreement includes the goal to “virtually eliminate” industrial emissions of persistent toxic substances. A political battle has been waged over the interpretation of the concept of “virtual elimination.” Environmental groups have advocated a strict interpretation of this concept, asserting that “zero means zero.” Great Lakes firms have rallied against such a narrow interpretation. They have contended that such a strict interpretation not only would threaten their businesses but also would not be a cost-efficient form of protecting the Great Lakes. In their eyes, greater ecological gains are to be had by investments elsewhere. The IJC has aligned itself with the environmental movements. Through its publications it has aggressively exhorted the governments to strive for a full elimination of persistent toxic substances.

Another important issue has been the existence of chlorine in the Great Lakes basin. In a hotly contested recommendation to the North American governments in 1992, the IJC called for the elimination of chlorine from the Great Lakes ecosystems (IJC 1992:57). This recommendation has infuriated Great Lakes firms. It has served as a lightning rod for their opposition against the IJC. Both in the United States and in Canada, corporations have established organizations—the Chlorine Chemistry Council in Washington, D.C., and the Canadian Chlorine Coordinating Committee in Ottawa—with the sole task of blocking the acceptance of this one IJC recommendation by the national governments. These two organizations have a powerful argument: chlorine is an element from the periodic table. An unsympathetic reading of the recommendation by the IJC is, therefore, that the international organization has proposed to remove a natural element from the Great Lakes ecosystems. This one recommendation, more than anything else, has badly damaged the IJC’s reputation among business executives. It has given them powerful ammunition to claim that the IJC is partisan and bases its proposals on “bad science.” In fact, the chlorine elimination recommendation of 1992 sparked a debate among Great Lakes firms whether to lobby for the abolishment of this 90-year-old international organization.

In sum, the International Joint Commission has taken a rather one-sided view of the environmental issues in the Great Lakes area. This is fully understandable within an adversarial setting, and (within that setting) its view is probably beneficial for the environment. However, the IJC’s actions have deepened the rifts that had already existed among the actors in the Great Lakes regime. Thus, it has reinforced the adversarial system of water protection on the (United States side of) the Great Lakes area. This result was not inevitable, precisely because the IJC has had firsthand experience with a more consensual way of water protec-

tion; namely, the Canadian way. The IJC, therefore, has missed a chance to bring business firms, environmental groups, and governmental departments closer together. In my view, the actions of the IJC have also been harmful to the environmental protection of the Great Lakes because, ultimately, the adversarial relations that have existed among Great Lakes firms, environmental organizations, and the EPA have been the main cause of the (relative) lack of willingness among Great Lakes corporations to invest in water protection measures.

## Alternative Explanations Considered (and Rejected)

### Effluent Fees

In all Rhine countries (except Switzerland), firms have had to pay a certain amount of money for each unit of pollution they discharge into open waters. Pollution fees have not been levied in the United States. This situation marks a clear difference between the two cases, and its causality points in only one direction: efforts to reduce pollution in the Rhine watershed have been more intense than those to reduce Great Lakes pollution. One may believe that the financial incentive of fees provides a brief and clear explanation that makes my historical-institutional account less compelling, or even superfluous. I reject this line of reasoning on the grounds that the pollution fees in the Rhine countries have always been quite small. Some figures clearly illustrate this fact. In the Netherlands, industry paid 348 million guilders (G) in effluent fees in 1985 and G 611 million in 1996: which is 0.30% and 0.45%, respectively, of the total production costs of industry in these years (Statistics Netherlands [2000]). In Germany, the amounts involved have been even smaller. For example, in 1995 the firms in Länder through which the Rhine flows paid approximately 86.1 million deutsche marks (DM) in effluent fees.<sup>38</sup> This figure represents about 0.014% of the added value of these companies. The number also pales into insignificance compared to the DM 1.32 *billion* incurred for water protection measures by only the German chemical companies on the Rhine in the same year.<sup>39</sup> Moreover, my choice of such a late year (1995) does not underestimate the importance of effluent fees. Granted, the discharges into the Rhine have been greatly diminished over time, thus reducing the amounts to be paid in effluent fees. However, in order to counter this trend of reducing fees, the German authorities have raised effluent fees from DM 12 per pollution unit to DM 70—an almost sixfold increase. One may therefore conclude that the German effluent fees have always

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<sup>38</sup> Figures received from the environment ministries of these *Länder*.

<sup>39</sup> Figure received from the German Association of the Chemical Industry (VCI).

been small and thus of little consequence to German firms on the Rhine.

In Switzerland, no effluent fees were raised between 1970 and 1998. Furthermore, the governments of the Rhine countries have seldom, if ever, threatened or intended to raise their effluent fees drastically. Because the (actual and expected) effluent fees have always remained small, they can only have played a correspondingly limited role in the decisionmaking of the companies. As Peter Rogers observes: “[I]n general, the [European] governments are reluctant to raise the effluent charges high enough to achieve the desired levels of waste reduction” (Rogers 1996:139). The (actual and foreseen) European pollution fees have been much too small to serve as a powerful explanation for the reason the Rhine companies have invested more than have Great Lakes firms in water protection.

### **Which Institutional Answer Is the Right One?**

I have answered the puzzle of this essay by employing the historical version of new institutionalism. But this method ignores two other possible institutional answers: those that might be provided by the sociological and rational choice versions of new institutionalism. The sociological new institutionalism theory has mainly focused on explaining the *similarities* between organizations and processes in different parts of the world (the phenomenon of “isomorphism,” from, e.g., Meyer et al. 1997). It has not said much about the differences between organizations and processes in various areas, which is the focus of this article. I therefore only consider the extent to which rational choice institutionalism affects the problems I have posed here.

A central concern of rational choice institutionalism is the principal-agent problem.<sup>40</sup> This problem states that a main worry of “principals” consists of ensuring that the “agents” they have employed will implement the policies that the principals have decided upon, instead of acting upon their own preferences and interests. Principals can never be sure that agents do not deviate from the plans set by the principals, since (in a world of costly information) they have much less information about the behavior of their agents than the agents themselves do.

Rational choice literature has highlighted two mechanisms that may overcome this problem: (1) administrative procedures; and (2) oversight procedures (McCubbins et al. 1987). The former limits the agents’ autonomy by providing agents with precisely formulated tasks, working methods, and resources. The latter achieves the same by monitoring, rewarding, and sanctioning agents. Matthew McCubbins and Thomas Schwartz (1987) have

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<sup>40</sup> For overviews of rational choice institutionalism, see Moe (1984) and Weingast (1996).

made distinctions between two forms of oversight: “police controls” and “fire alarms.” Police controls consist of monitoring by the principals themselves, whereas fire alarms are set off by third parties (usually interest groups). Most of this literature has been applied to studies of how parliaments attempt to limit the autonomy of regulatory agencies.<sup>41</sup> However, the implications of this model for the relationship between government agencies (as principals) and the organizations that they attempt to regulate (the agents) are clear as well: Government agencies should attempt to constrain the autonomy of those that they want to regulate by engaging in a mix of administrative controls and oversight mechanisms.

Could use of this rational choice model solve any part of my puzzle? It certainly could not. In fact, the insights provided by rational choice institutionalism only add to the mystery of why the industrial effluents into the Rhine have been less toxic than the discharges into the Great Lakes; for both administrative and oversight procedures have been used to a far greater extent by the environmental authorities in the Great Lakes basin than by those in the Rhine watershed.

*Regarding administrative procedures:*

The U.S. water protection laws pertaining to the Great Lakes area (such as the 1972 Clean Water Act and the 1990 Great Lakes Critical Program Act) have been much more specific and extensive than the water protection laws prevalent in the Rhine countries. The U.S. regulations have laid out overall policy goals, water quality standards, effluent norms, and permitted technologies more comprehensively than have the European water laws. For example, although Germany’s current effluent standards take up only a few pages, the U.S. effluent standards at present take up 1,592 pages of the U.S. Code of Federal Regulations. It can therefore be concluded that U.S. water protection laws have prescribed the activities of firms to a greater degree than European laws have.

*Concerning police controls:*

As I have already discussed, the U.S. authorities responsible for the protection of the Great Lakes have been more heavy-handed than their counterparts in the Rhine countries. The EPA has closely monitored how state authorities and firms have implemented its water protection policies, and it has not hesitated to sanction lagging states and enterprises. Such direct monitoring and severe sanctioning have been much less prevalent in the

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<sup>41</sup> See, e.g., Shepsle & Weingast (1987); McCubbins et al. (1989); Ferejohn & Shipan (1990).



Rhine countries, where implementation of water protection laws by regulatory agencies has often been only halfhearted.

*With respect to fire alarms:*

These tactics have been used extensively in the environmental protection of the Great Lakes. The governments of the United States and Canada have used the International Joint Commission as a fire alarm with respect to the cleanup of the Great Lakes. Every two years, the IJC publishes a comprehensive critical report on the progress the two governments have made under the 1978 Great Lakes Water Quality Agreement. These biennial reports include the views of many environmental groups on the cleanup of the Great Lakes. These international fire alarms are complemented by domestic ones. Under the 1986 Community-Right-to-Know Act, U.S. companies are obliged to report the content of their releases into the open air and water. Also, environmental groups have the right under U.S. law to sue the EPA, state regulators, and firms for not implementing water protection policies swiftly enough. Such fire alarms are much less in use in the Rhine countries. One must therefore conclude that the U.S. agencies responsible for the protection of the Great Lakes have wielded the weapons of administrative procedures, police controls, and fire alarms to a far greater extent than have their counterparts in the Rhine countries. But even with all these efforts, the industrial discharges into the Rhine have been less toxic.

## **Conclusion**

I have taken several steps to explain why the industrial effluents into the Rhine have been cleaner than the releases into the Great Lakes (despite looser regulation). I have shown that Rhine firms have made extensive investments in water protection measures that have gone beyond existing legal norms. These water protection measures have been so extensive as to outweigh the considerable water protection efforts that Great Lakes companies have been obliged to make. I have argued that these divergent methods of investing in water protection measures have sprung from two alternative ways of conducting environmental politics: the more-adversarial processes in the Great Lakes region, and the relatively consensual processes in the Rhine area. I have explained that these alternative methods of engaging in environmental politics have sprung from (1) American exceptionalism; (2) different state-society arrangements in the two regions; and (3) international regime differences.

One issue remains, however; in general, can it be said that more-cooperative institutions lead to more-comprehensive envi-

ronmental protection methods than institutions that polarize the problem? The issue seems clearcut, judging by the evidence presented here. The more-consensual politics of the Rhine countries appear to have led to cleaner industrial effluents than have the antagonistic policy processes by the nations and states in the Great Lakes watershed. Yet, I must relate a number of reservations. First, one needs to remember that I have compared only two environmental regimes, which does not allow for strong inferences. In addition, I have focused only on one circumscribed aspect of these two regimes, namely, industrial discharges into water. I have not considered industrial discharges into air, polluted sediments, agricultural emissions and discharges, or the loss of habitat. It is to be determined how including any of these factors would have affected my conclusions.

Yet, even with these disclaimers in place, one needs to note that my conclusion falls in line with other recent studies that compare the effectiveness of the American adversarial style with the consensual approach followed elsewhere. In particular, a statistical analysis of data from the Organization for Economic Cooperation and Development, undertaken by Lyle Scruggs (1999), also delivers the message that more-consensual approaches to environmental protection measures appear to bring about more environmental protection.<sup>42</sup>

Additionally, when empirical evidence is not sufficient, one can also tackle these kinds of issues deductively. One can set up a rationale suggesting that consensual institutions benefit environmental protection more than divisive ones. This explanation would run as follows: Ecological issues are truly *cross-boundary*; they cut across both territorial and scientific borders, and they also cut across different segments of society because both their causes and solutions typically lie in a variety of social processes.

One may argue, however, that ecological issues are so complex that their resolution needs the cooperation of all involved organizations. Each of these organizations has unique skills and knowledge: Firms have detailed knowledge of their cost structure, and they are well positioned to develop new technologies and to find efficient, practical solutions to environmental problems. Environmental groups are useful “watchdogs.” They tend to perceive ecological problems before other organizations do. Government agencies can be useful by acting as the “objective,” neutral arbitrator of environmental groups and firms with contradictory opinions. Government can also exert pressure on firms that stubbornly resist the implementation of environmental agreements, thus ensuring a level playing field. Furthermore, government agencies can set priorities, overview implementation, and coordinate the different environmental measures. Thus

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<sup>42</sup> See also Kagan & Axelrad (1997); Aoki & Cioffi (1999).

the positive contributions that all of these organizations may have to offer to environmental protection are allowed to come out when they are under institutions that do not pit these organizations against each other. When they are under adversarial institutions, however, everyone is busy discrediting the claims of everyone else, thereby reducing the contributions that each could make. This line of reasoning clearly favors more-cooperative over less-cooperative institutions for environmental protection.

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