



## **Gemeinschaftsgüter: Recht, Politik und Ökonomie**

Preprints  
aus der Max-Planck-Projektgruppe  
Recht der Gemeinschaftsgüter  
Bonn  
2000/2

Two Ways of Solving Environmental Problems:  
A Comparative Study of Industrial Releases Into the Rhine  
and the Great Lakes

von  
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Januar 2000

## **Two Ways of Solving Environmental Problems: A Comparative Study of Industrial Releases Into the Rhine and the Great Lakes<sup>\*</sup>**

In 1859, John Stuart Mill asserted: "in an imperfect state of the human mind, the interests of the truth require a diversity of opinions".<sup>1</sup> In other words, decision-making benefits from the expression of, and comparison between, alternative viewpoints. Behind this idea is the assumption that within each political sphere various perspectives are typically in competition, between which it is unwise to decide *a priori*. In some times and places certain perspectives may capture reality more accurately, while in other periods and regions other perspectives may be more relevant. This assumption implies something else as well. It is not so much the expression of diverse viewpoints that may count, but a fruitful and open-minded discussion between defenders of different faiths that may be important.<sup>2</sup>

A branch of the research tradition that goes by the name of "the new institutionalism"<sup>3</sup> has picked up on this idea. This branch cannot properly be called "novel", but has grown a number of new leaves in recent years.<sup>4</sup> According to this institutionalist perspective, one way in which institutions influence policy outcomes is by shaping the interaction between advocates of alternative viewpoints. Institutions do so by: (1) distributing power resources among those who espouse alternative policy beliefs; (2) regulating the access that defenders of different viewpoints have to the processes of problem-definition, information gathering and decision-taking; and (3) affecting the extent to which those who favour alternative perspectives are open to each other's arguments. In this literature there is often a preference for more participatory institutions.

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\* This essay has greatly benefited from comments and criticisms generously offered by Uda Bastians, Tanja Boerzel, Christoph Engel, Adrienne Héritier, Christer Jönsson, Gerd Junne, and Jan Zielonka.

<sup>1</sup> Mill 1974 (1859), 114.

<sup>2</sup> On this, Elster 1998.

<sup>3</sup> Introductions to the new institutionalism are March and Olsen 1989; Powell and DiMaggio 1991; Hall and Taylor 1996; and Immergut 1998. On the need to apply the new institutionalism in the study of international relations see Keck 1991 and March and Olsen 1998.

<sup>4</sup> Among the leaves: Kriesi *et.al.* 1992; Bohman 1996; Guttman and Thompson 1996; Nino 1996; Hendriks 1999.

In the comparative study that I will report here the focus will be on this third effect: the ways in which institutions either divide or unite perspectives. Some institutions, or so I will argue, bring about a dialogue and mutual understanding between actors, while other institutions tend to sustain antagonisms and miscomprehension between adherents to different ways of thinking – with far-reaching consequences for both domestic and transboundary common goods.<sup>5</sup>

I will instance this argument with a comparison between the discharges of toxic substances by the industrial firms that are bordering the river Rhine with the same polluting activities of the enterprises situated at the United States side of the Great Lakes. A study of the industrial effluents in these two regions is relevant as both water basins not only encompass vulnerable ecosystems, but also harbour tremendous economic activity. Some salient details illustrate the latter point. The Rhine flows from the Bodensee in Switzerland, through France and Germany, before scattering all over the Netherlands. Along its shores, some 18% of the world's chemical industry has been located. The 1,320 km long river also connects the biggest seaport in the world (Rotterdam) with the largest inland port on the globe (Duisburg – at the heart of the German Ruhr area). Nearly 50 million people live presently in the Rhine valley.<sup>6</sup> The Great Lakes region in North America (encompassing Lake Superior, Lake Michigan, Lake Huron, Lake Erie and Lake Ontario) is also of paramount economic importance. Of the Fortune 500 largest industrial companies within the United States, almost half have their headquarters within the Great Lakes states (Minnesota, Wisconsin, Illinois, Ohio, Indiana, Michigan, Pennsylvania and New York).<sup>7</sup> The Canadian part of the Great Lakes area contains extensive industrial and agricultural production as well. Around 33 million people live in the Great Lakes basin.<sup>8</sup> In sum, both the Rhine valley and the Great Lakes basin form sites where ecological values and huge economic interests come together.

In my research, I have followed Arend Lijphart's 'comparative cases strategy'.<sup>9</sup> According to this strategy, one has to choose cases: (a) without prior knowledge of the dependent variable; (b) that vary significantly on the independent variable; and (c) that are as similar as possible regarding all other potentially explanatory factors. In selecting the cases of the industrial effluents into the Rhine and Great Lakes I have followed these rules. The dependent variable of this research is the toxicity of industrial discharges into water basins. When I started the research, I did not know how the toxicity of the effluents from U.S. firms in the Great Lakes basin would compare to the toxicity of discharges from enterprises in the Rhine area. If anything, I expected the opposite of what I found: during the period 1970 up to present the discharges from U.S. firms into the Great Lakes have remained substantially more toxic than the industrial effluents into the Rhine. I was aware of

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<sup>5</sup> An introduction to the literature on adversarial versus consensual institutions is McRae 1997.

<sup>6</sup> International Commission for the Protection of the Rhine against Pollution 1998.

<sup>7</sup> Erdevig 1991, 26.

<sup>8</sup> Environment Canada 1995.

<sup>9</sup> Lijphart 1971.

significant variation on the independent variable, *i.e.*, the institutional setting. The institutions that regulate the industrial emissions from the U.S. side into the Great Lakes flow from two sources. Partly, these institutions derive from the international regime to restore the environment of the Great Lakes. This regime is well-known for its huge amounts of public participation - something which cannot be said for the international regime to protect the Rhine. Other relevant institutions are part of the relationships between the executive, judiciary, legislature, business community and environmental movement within the United States - again areas that are quite differently organised in Western Europe.

Many other factors that could conceivably provide an explanation for the differences between the cases fall into either of two categories. Various of these potentially explanatory variables have quite similar values across the two cases. During the period of investigation (1970 up to the present), the countries that are represented in both water basins have all been stable democracies, have all experienced high levels of economic prosperity, have shared comparable levels of environmental concern, and have all tried to regulate water protection in basically similar ways. These factors can therefore be ignored in the explanation. Other elements would lead one to expect the exact opposite of what I concluded. A number of factors would easily lead one to assume that the industrial effluents from the U.S. firms into the Great Lakes would have to be less toxic than the discharges of their European counterparts into the Rhine. These factors include the following. In the Great Lakes basin, a very well-organised and influential epistemic community has existed, something which has been absent in the Rhine area. The international agreements covering the protection of the Great Lakes have also been much more stringent than the Rhine conventions. Moreover, the international organisation assigned to overview the environmental restoration of the Great Lakes (the International Joint Commission - IJC) has had many more means to influence policy than its counterpart in the Rhine, the International Commission for the Protection of the Rhine against Pollution (ICPR). Even more importantly, the domestic water protection laws have been stricter in the United States than in any of the Rhine countries. Arguably as well, with regard to water protection the federal and state authorities in America have been more innovative in their policy-making than their counterparts in the Rhine countries.

The puzzle of this article can therefore be formulated as follows: *how is it possible that the discharges by U.S. firms into the Great Lakes have been more polluting than the industrial effluents into the Rhine, despite the existence of many factors that would lead one to expect the opposite?* I will formulate an answer in terms of the institutions that have regulated the relationships between the relevant government agencies, legislature, courts, environmental groups, industrial firms and international organisations. I will complement this argument in two ways. First, by pointing out that the U.S. authorities have not levied fees for the (legal) emissions of firms, whereas the authorities in the Rhine countries have done so. Second, by explaining how the role played by the International Joint Commission has amplified some of the adverse effects that U.S. domestic institutions have had on water protection. My research will mainly focus on the years 1970-1998.

The logic of the comparable cases strategy has prevented me from choosing a more encompassing dependent variable. In particular, I have looked neither at agricultural and municipal discharges of wastewater, nor at airborne depositions of pollutants, nor at the problem of soil contamination. Including these factors would not have allowed me to concentrate on institutional factors, as these other forms of pollution have been heavily influenced by non-institutional elements, such as infrastructure, geography and economic developments.

Another methodological admonition has kept me from analysing the discharges into the Great Lakes from Canadian firms. This omission is perhaps somewhat surprising. My arguments in this essay will hinge on the differences between American institutions that sustain adversarial relations between governmental and non-governmental actors, and European institutions that tend to bring about more understanding between state and non-state actors. Basically, I will say that the more adversarial processes within the United States have decreased the incentives and motivations of American firms to invest in water protection, whereas the more consensual processes in the Rhine countries have increased the incentives and willingness of industries to clean up their effluents. From this viewpoint it would have been interesting to include in the analysis effluents of Canadian firms into the Great Lakes basin, as Canadian institutions resemble European ones,<sup>10</sup> and as their environmental decision-making processes are much more based on consensus than in the United States.<sup>11</sup> My arguments would have gained strength if I had shown that the emissions of pollutants by Canadian enterprises in the Great Lakes had been less toxic than the discharges of U.S. firms. I have not tried to do so for a methodological reason: the need to choose units for comparison that are independent of each other.<sup>12</sup> With regard to the industrial effluents of the Canadian and U.S. firms around the Great Lakes this condition is certainly not met. To start, the firms in the whole area are linked in so many ways that is not exaggerated to talk of an integrated 'Great Lakes economy'.<sup>13</sup> Moreover, Canadian and U.S. firms have also combined their efforts to influence government agencies in the Council of the Great Lakes Industries. Last, U.S. environmental policies usually serve as a motor for the development of Canadian environmental policies.<sup>14</sup> This makes the two cases highly interdependent, with (broadly speaking) the U.S. side overshadowing events in the Canadian part of the basin. To side-step this problem I have only looked at discharges by U.S. firms.

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<sup>10</sup> Lipset 1990.

<sup>11</sup> The Canadian policy initiatives concerning industrial pollution of the Great Lakes have usually explicitly been based on consultation and cooperation. Examples are the policy initiatives *ARET* and *ARET 2* (Accelerated Reduction and Elimination of Toxics Programs) by Environment Canada, and *Great Lakes 2000* by Health Canada.

<sup>12</sup> King, Keohane and Verba 1994, 222.

<sup>13</sup> Allardice and Testa 1991.

<sup>14</sup> Hoberg 1991.

The structure of this article closely follows the rationale of the comparative method. First I will present the puzzle in greater detail. This will involve two things: (a) showing that industrial discharges by U.S. corporations into the Great Lakes have contained more toxic elements than the discharges by firms into the Rhine; and (b) describing the numerous factors that would have led one to expect the opposite result. Thereafter, I will argue that various non-institutional differences between the cases cannot adequately explain this puzzle. This will create space for my own explanation, in terms of the institutions that have regulated the relationships between firms, environmental groups, international organisations, the judiciary, the legislature, and the executive in both areas. Last, I will consider the degree to which my research results can be generalised, and whether a basis can be found for a normative evaluation of my conclusions.

A note on how the data for this article were gathered. In addition to 59 interviews with stakeholders in the Rhine basin, I held 48 interviews with representatives of organisations involved in the pollution and protection of the Great Lakes.

## **Puzzling**

Something is puzzling. During recent years, the emissions of U.S. corporations in the Great Lakes basin have contained a number of persistent toxic substances that have already been kept out of the effluents of enterprises in the Rhine valley for quite some time. This has occurred despite the existence of many differences between the two cases that would have led one to predict the opposite. These differences include:

- ? an influential and prestigious international organisation in the Great Lakes area (the IJC), as compared to the weak, small and (to a larger public) unknown International Commission for the Protection of the Rhine against Pollution;
- ? excellent, decades-long international cooperation between Canada and the United States on the protection of the Great Lakes, and (until 1987) internecine diplomatic strife in the Rhine basin;
- ? international environmental treaties in North America that have been stricter and more ambitious, and have had more influence on domestic policies and laws, than the international agreements pertaining to the protection of the Rhine;
- ? domestic water protection laws in the United States that have been more stringent than anywhere in Europe;
- ? a thriving, well-organised and active epistemic community (consisting of natural scientists, political scientists and lawyers) pushing for the restoration of the Great Lakes - something virtually absent in the Rhine basin;
- ? environmental organisations in the Great Lakes region that have been better organised, and have had more access to decision-making (both at the national and international level) than similar groups concerned with the Rhine;

- ? more creative policy-making by both the governmental and inter-governmental organisations concerned with the protection of the Great Lakes, in comparison to the decision-making regarding the clean-up of the Rhine.

All of these assertions will have to be substantiated. I will begin by showing that the industrial effluents of the U.S. firms in the Great Lakes area have remained more toxic than the emissions by corporations situated on the Rhine.

Comparing the toxicity of discharges entails making a decision about which substances should be seen as pollutants. And this is difficult, since part of the political struggle between government agencies, firms and environmental groups is exactly about which substances are toxic and which are not toxic (and about the levels of concentration at which these substances are, or are not, harmful). Given these disputes between actors about the resilience of ecosystems, I have opted for a minimal set: a list of persistent chemical substances that almost all involved organisations in both regions have accepted as highly toxic. In 1991 the IJC produced a list of 11 'critical pollutants'.<sup>15</sup> This list contains chemicals that have quite universally been viewed as highly toxic in both the Rhine watershed and the Great Lakes basin. According to the IJC, the U.S. Environmental Protection Agency (EPA) and Environment Canada, these 11 critical pollutants are still being discharged into the Great Lakes by both Canadian and U.S. firms.<sup>16</sup> Five of these pollutants are not relevant to this study, as they are pesticides that are only released by agricultural firms, and not by industry. The question now becomes: are the remaining 6 critical pollutants still being discharged into the Rhine? An answer can be obtained from the measurements made and published by both the water supply companies along the Rhine (organised into *the Internationale Arbeitsgemeinschaft der Wasserwerke im Rheineinzugsgebiet* - IAWR) and the International Commission for the Protection of the Rhine. For my analysis, I have relied on data regarding water quality in a downstream part of the river, namely in the Dutch town of Lobith. This is where the Rhine enters the Netherlands after having travelled through the highly industrial Ruhr area in Germany. I have consulted the data for 1996. From this, the following table can be constructed:

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<sup>15</sup> IJC 1991.

<sup>16</sup> IJC 1991; Environment Canada and EPA 1997.



**Table 1:** quality of Rhine water at Lobith in 1996 (annual averages in µg/l; the symbol ‘<’ stands for quantities too small to be detectable with current measurement techniques)

	Rhine water in 1996
PCBs*	6 - 12
Dioxin (2,3,7,8-TCDD)	<
Furan (2,3,7,8- TCDF)*	<
Mercury	0.038
Benzo(a)Pyrene	<
Lead	4,5

\* : figure received from the ICPR. All other numbers are taken from IAWR 1996.

So, in 1996, 3 of the 6 persistent toxic substances that were still being discharged by Great Lakes firms could not be detected in the Rhine. For all practical purposes this means that these pollutants were no longer present in the effluents of the Rhine industries. The three pollutants that did show up in the Rhine water were PCBs, mercury and lead. The only reason that PCBs can still be found in the Rhine water has to do with previous discharges of these substances. In 1996, PCBs were not dumped into the Rhine. What has happened is the following. In the 1970s and 1980s PCBs were released into the Rhine. These substances then sank to the bottom and polluted the sediment of the river. Due to the currents in the river, PCBs are sometimes released from the river bed. This is the only reason for why PCBs can still be found in the waters of the Rhine.<sup>17</sup>

The other two priority substances that can still be detected in the Rhine are mercury and lead. These two substances are quite different from the other four chemicals in table 1. A major difference is that mercury and lead are formed in natural processes, while the other four chemicals are solely human-made. It is therefore not realistic to demand zero levels of mercury and lead in water. For these substances another comparison is therefore needed. The Rhine water supply companies have established very stringent standards for the water quality of the river. If these standards were met, then it would be possible to prepare safe drinking water solely on the basis of natural purification methods. The average annuals of mercury and lead in the Rhine basin were well within the strict standards promoted by the drinking water companies.<sup>18</sup>

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<sup>17</sup> This is not my personal opinion, but is described in Wieriks and Schulte-Wülwer-Leidig 1997, 152. At the time of writing Mr. Wieriks and Ms Schulte-Wülwer-Leidig were, respectively, the Executive Secretary and the Deputy Secretary of the ICPR.

<sup>18</sup> RIWA 1996, p. 14.

Perhaps, *prima facie*, these results do not seem impressive. However, one should consider the following. These 6 substances are among the most dangerous chemicals used by modern industry. They are not only highly toxic but also persistent, as they do not break down in an ecosystem. It is also important to realise that the 6 pollutants are not singular substances, but actually stand for large categories of chemicals. For instance, PCBs come in 209 varieties. Dioxin is a family of 75 chlorinated chemicals, furan has 135 variations. It is not surprising, then, that these chemicals are used in a wide array of industrial processes. In sum, the finding that the 6 highly toxic substances that are still being discharged by Great Lakes firms are no longer emitted into the Rhine does indeed represent a major difference between the cases.

This finding corresponds with expert opinion. During my interviews with stakeholders from the Great Lakes watershed a large majority said that corporations were still emitting small quantities of traditional pollutants, such as PCBs. In contrast, the predominant opinion among the interviewees from the Rhine basin was that industrial firms no longer released such pollutants. This is also consistent with the finding of Christopher Allen that the German chemical enterprises invested twice as much in environmental protection measures as their American counterparts during the period from mid-1970s to mid-1980s.<sup>19</sup> In all, it can therefore be concluded that although the U.S. firms in the Great Lakes basin have cleaned up their releases to a significant extent, the companies along the Rhine have recorded even more impressive results.

This result would probably have been unexpected even if one had only had a superficial knowledge of the two cases. Many well-known similarities between the Rhine countries and the United States exist. All involved countries share similar levels of wealth and support for environmental protection.<sup>20</sup> They all combine capitalist economies with democratic polities, and have been at peace with other since 1945. These broad similarities rule out 'crude' accounts of why the industrial effluents in the Rhine basin have been cleaner than in the Great Lakes watershed. This makes the fact that the industrial effluents into the Rhine have been significantly less toxic already somewhat puzzling. The mystery deepens if one ponders the many factors that would have induced one to predict exactly the opposite. These factors have already been introduced above. Now it is time to explore them in greater detail.

### *Two international commissions*

The International Joint Commission has had many more opportunities and means for promoting environmental protection measures in the Great Lakes basin than the International Commission for the Protection of the Rhine against Pollution has had in the Rhine watershed. The IJC is older, it has been active since 1909, while the ICPR was only

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<sup>19</sup> Allen 1989, p.172. He puts the total amount of investment in environmental protection by the German industry during this time at DM 30 billion. This figure includes air as well as water protection.

<sup>20</sup> Inglehart 1997, 138-41 and 237-66.

formed in 1963. This means that the IJC has had much more time to build up its prestige. Furthermore, the IJC has not solely been concerned with water quality and environmental protection. It has also frequently been consulted about the waterlevels of the lakes, and has had veto powers for any project that might affect the level of the lakes. Again, this means that the IJC has had many more opportunities to gain acceptance as an authority on Great Lakes matters. The ICPR has not been given any other responsibilities outside the field of environmental protection. Perhaps even more important is that the IJC has had a vastly bigger budget, and as a consequence has been able to hire a larger staff. In fact, the budget of the IJC has been 6 to 10 times higher than that of the ICPR.<sup>21</sup> Last, the IJC has enjoyed far greater independence than the ICPR. In the 1978 Great Lakes Water Quality Agreement, the IJC was asked to monitor, and publicly comment upon, the treaty's implementation by the two governments. The IJC has performed this task diligently. Starting in 1980 it has organised huge conferences every two years. At these conferences representatives from many non-governmental organisations from around the basin give their opinions on the protection of the lakes in general, and the implementation of the Water Quality Agreement in particular. These opinions, as well as the views of the IJC itself, are then published in its 'Biennial Reports on Great Lakes Water Quality'. In these reports, the IJC regularly exhorts the governments to do more. The biannual conferences and reports have given the IJC wide public recognition and media coverage. This 'watchdog role' is unknown to the ICPR, which would never publicly offer criticisms of governments or suggest major policy initiatives.

### *The relative influence of environmental organisations*

A next element that contributes to the riddle of this essay is the relative influence that environmental organisations have been able to exert in both watersheds. The environmental groups concerned with the Great Lakes have been much better organised and have had much more influence on government policies than the ecological movements in the Rhine valley. With the formation of Great Lakes United in 1982 the environmental organisations from the Great Lakes region have reached a unique degree of professionalism and cooperation. Great Lakes United is an umbrella organisation of more than 200 citizens' groups (environmental groups, labour unions, sport fishing interests) involved in the protection of the watershed. It means that at times the environmental groups speak with one voice to decision-makers. It also adds to the perceived legitimacy of the environmental movements. If Great Lakes United formulates a standpoint it is often taken by public officials to be 'the opinion of the environmental groups', or even 'the public's opinion'. Such concertation between citizens' groups has been impossible to achieve in the Rhine basin.

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<sup>21</sup> For instance, in 1996 the budget of the IJC was \$ 3,400,000, while the ICPR had DM 1,200,00 at its disposal. In 1986, the IJC spent \$ 3,500,000 and the ICPR DM 700,000. (Figures obtained through contacting both organisations.)

In addition to a higher degree of cooperation amongst themselves, the American environmental associations have had superior access to decision-making at both the national and international level. Under the *Administrative Procedure Act* of 1946, it is obligatory for U.S. government agencies to seek public input whenever they are considering new policies and laws. As a consequence, EPA (the lead agency for water protection in the U.S.) cannot develop a new policy initiative without extensive public hearings, which also involve environmental groups. In the countries of the Rhine area, public participation in governmental decision-making has been set up in various ways. France has allowed the least amount of participation by environmental groups, while Switzerland has provided for the greatest amount of public participation.<sup>22</sup> However, in none of the Rhine countries has the participation of environmental organisations been so frequent and so firmly ensconced in law as in the United States.

At the international level, the American environmental movements have had unique opportunities. The IJC has provided them with several platforms. At the Biennial Conferences organised by the IJC they are able to express their views. On various occasions, representatives from environmental groups have been offered the chance to sit on one of the advisory boards to the IJC. Even more remarkable is the role that three environmental organisations played during the international negotiations over the 1987 Amendments to the 1978 Great Lakes Water Quality Agreement. During these international deliberations, Great Lakes United, the Sierra Club and the National Wildlife Federation were invited to participate as observers on the negotiation team from the United States. The diplomatic mission from Canada included two members of Great Lakes United as observers.<sup>23</sup> Compare this to Rhine regime, where the ICPR only started to communicate with environmental groups at the end of 1996.

Last, American environmental organisations have unusual standing in courts of law. When Congress adopted the Clean Water Act and the Clean Air Act in the early 1970s, it deliberately incorporated into these laws the possibility for environmental organisations and other interest groups to sue both polluters and EPA itself, if the basic goals of the laws were not being achieved. Through lawsuits, environmental groups can try to force EPA to implement policies that meet the standards of the original environmental acts. This is in stark contrast with Western Europe, where the possibilities for NGOs to take legal action against ministries have always been smaller. In sum, it can therefore be concluded that the environmental groups in the Great Lakes basin have had much more scope to influence environmental policy than in the Rhine region.

#### *One epistemic community*

The concept ‘epistemic community’<sup>24</sup> seems to have been invented for application in the case of the protection of the Great Lakes. An extensive, active and very well-organised

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<sup>22</sup> Kriesi, Koopmans, Duyvendak, and Giugni 1992, 222-25.

<sup>23</sup> Manno 1994, 72.

<sup>24</sup> Haas 1990.

epistemic community of natural scientists, political scientists and law professors has been advocating environmental protection in the Great Lakes watershed since at least the late 1970s. They work in the numerous universities located in the area (Wisconsin, Michigan, Cornell, New York, Toledo, Dartmouth, Waterloo, Windsor). Natural scientists also work for the Great Lakes Environmental Research Laboratory (U.S. Department of Commerce), as well as the Great Lakes Science Center (U.S. Department of the Interior). Two academic journals are devoted to publishing their research: the *Journal of Great Lakes Research* and the *Toledo Journal of Great Lakes' Law, Science, and Policy*. 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'. These gatherings have been organised jointly by academics in both countries to bring together about fifty participants from universities, government agencies and environmental organisations from around the basin to discuss emerging Great Lakes issues and their implications for governance.<sup>25</sup> In the Rhine valley, I have found no traces whatsoever of an epistemic community advocating the preservation of the river.

Together, the IJC, environmental organisations and epistemic community of academics have formed a formidable force for the protection of the Great Lakes. Many cross-cutting linkages exist between the three groups of actors.<sup>26</sup> Needless to add by now, in the region of the Rhine no such impressive array of 'green' forces has ever seen the light of day.

#### *How strict have international treaties been?*

The pressure that has been exerted by environmental organisations, the IJC and the epistemic community has been partly responsible for the adoption of international agreements for the protection of the Great Lakes that have been more timely, ambitious and influential than the international conventions concerning the restoration of the Rhine. Again, this would have led one to expect cleaner industrial discharges into the Great Lakes (although in reality the opposite has taken place).

As early as 1972 the first Great Lakes Water Quality Agreement was signed, aiming at the reduction of phosphorus in the Lakes. This was 4 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. This treaty aims at restoring 'the chemical, physical, and biological integrity of the Great Lakes Basin Ecosystem'. In order to achieve this goal, it calls for the virtual elimination of the discharge of 'any or all persistent toxic substances'. The wording of the Rhine Chemical Convention of 1976, and the Salt Convention from the same year, is much more cautious and traditional. The ecosystem concept does not appear in these treaties. This concept makes its debut in the Rhine regime with the adoption of the Rhine Action Programme in 1987. Furthermore, the two Rhine Conventions from 1976 merely express the intention to eliminate emissions of a more limited black list of

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<sup>25</sup> Francis and Regier 1995, 271.

<sup>26</sup> Documented in Francis and Regier 1995.

substances, and to reduce emissions of an equally limited grey list of pollutants. A similar difference applies to the pollution of sediments. The 1987 Amendments to the Great Lakes Water Quality Agreement include the aim of cleaning up polluted sites. In contrast, in the Rhine Action Programme of the same year the goal is only to reduce ongoing contamination of sediments.

#### *Amicable versus internecine international relations*

The strict international agreements concerning the Great Lakes were partly the result of almost frictionless negotiations between the federal governments of the United States and Canada. From the beginning of the 1970s up to the present, these negotiations have taken place in an atmosphere of great cooperation. Again, this forms a striking contrast with the Rhine region. Up to 1987, governments fought ferocious battles over minor details of this regime (culminating in the recall of the Dutch ambassador from Paris in 1979). It was only after the shock of the Sandoz-incident in November 1986 that effective international cooperation on the restoration of the Rhine took off.<sup>27</sup> The 1976 Salt- and Chemical Conventions were not implemented to any significant degree in the Rhine regime.<sup>28</sup>

#### *The strictness of domestic laws and policies compared*

This puzzle could have easily been explained if the domestic water protection laws and policies in the United States had been laxer than those of the Rhine countries. If that had been the case, everything would have been clear. In that situation, the industrial discharges into the Rhine would have been cleaner than the effluents of enterprises into the Great Lakes, if firms in both areas had simply followed the domestic water protection laws. Unfortunately, the water protection measures in the United States have not been laxer than in Western Europe. In fact, the American water protection measures appear to have been more stringent.

It has to be acknowledged that any comparison between the domestic programs in the Rhine countries and in the United States is difficult to make. Here is what I originally wanted to do. I wanted to compare the effluent limits for the 11 critical pollutants that are still being discharged into the Great Lakes, but no longer in the Rhine. This would have shown whether the European standards had been stricter than the American ones. My hunch was that they had not been - thus adding to the puzzle. This would have been the elegant thing to do (in terms of the analysis developed here). Unfortunately, for a number of reasons it appears impossible to make such a direct comparison between effluent guidelines.

The water protection programs of all five countries have had the same basic features.<sup>29</sup> In all countries, a firm can only discharge into waters if it has received a permit to do so. This

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<sup>27</sup> Villeneuve 1996.

<sup>28</sup> Nollkaemper 1996.

<sup>29</sup> The domestic water protection laws and policies concerning the Rhine are set out in Romy 1990. See

permit spells out the conditions for the contents of the firm's discharges, based on effluent limits and water quality standards.<sup>30</sup> A first hurdle for comparison is that countries vary with regard to the degree to which they have developed effluent guidelines. Some domestic permit systems rely more on effluent limits and others more on water quality standards. For instance, the Netherlands does not have effluent limits for 8 of the 11 critical pollutants singled out by the IJC. A second problem is that the countries have regulated different pollutants. Effluent limits pertain to categories of chemical substances. The governments of the five countries have categorised substances quite differently, which greatly hinders cross-national comparison. Last, in most countries specific effluent guidelines are usually developed for each particular branch of industry. However, the countries also categorise industries in alternative ways, making a comparison of effluent limits even harder.

Still, even though it is impossible to directly compare the effluent limits of the involved countries, something remains to be said about the relative stringency of the domestic water protection programs. For a start, something can be said about the aims of water protection laws. The U.S. Clean Water Act has included much more ambitious goals than the European laws. The 1972 amendments to this Act required all of the nation's water to become 'fishable and swimmable' by July 1983. They also established a national goal of zero discharge of pollution into America's waterways by 1985. Given the highly polluted nature of rivers and lakes in both North America and Europe in the early 1970s, these were ambitious plans indeed. In addition, EPA was required to develop effluent standards regardless of their technological or economic achievability.<sup>31</sup> The European policies have been formulated more cautiously. The aims of the various legal documents in the Rhine countries have been kept much more vague and modest. Moreover, throughout these documents pains are taken to point out that water protection should always be balanced against the protection of material interests.

The argument continues with technology-based standards. Under the U.S. Clean Water Act, industrial dischargers were obliged to employ the 'best practicable technology currently available' (BPT) by July 1, 1977, and the 'best available technology' (BAT) after July 1, 1984.<sup>32</sup> These technology-based restrictions have been much more binding than the ones used in Europe. The two U.S. standards call, respectively, for the installation of waste water plants with an "average of the best" or "best of the best" performance within an industry. The contrast with Europe is huge. For example, before 1990 German firms only needed to

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also, for France, Müller-Brandeck-Bocquet; for the Netherlands, Bressers and Plettenburg 1997; for Germany, Jänicke and Weidner 1997; and for Switzerland, Knoepfel 1997. For the United States, Evans 1993 as well as Andrews 1997.

<sup>30</sup> An effluent limit stands for the maximum amount of a chemical pollutant that the discharge of wastewater by a company or municipality is allowed to contain. A water quality 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 oxygen saturation or biodiversity) that should prevail in an open water.

<sup>31</sup> Vogel 1986, 162.

<sup>32</sup> Garrett 1994, 1.

apply the ‘allgemein anerkannten Regeln der Technik’ (generally accepted technology). This regulation did not really impose anything on industry. Since 1990 the German firms have been obliged to use the ‘Stand der Technik ’ (state of technology) for the emission of toxic pollutants. And even then, this German notion comes closer to the concept of ‘best practicable technology’ than to the idea of ‘best available technology’. Similarly relaxed policies have existed in the other Rhine countries. Given the variation between technology standards in the United States and the Rhine countries, it can rather safely be assumed that the effluent limits in the former country must be more severe than in latter countries. This is because effluent standards are calculated with one eye on technology standards.

A last issue that can be used for the comparison of the strictness of domestic laws is the difference between water quality standards. These standards lend themselves somewhat more to international comparison than effluent norms - though problems remain, as water quality aims also differ in number and content from country to country. However, as it happens, a rather easy opportunity exists to contrast a number of U.S. water quality standards for the Great Lakes with some of those in the Rhine countries. In 1995 EPA published the Water Quality Guidance for the Great Lakes System. This document harmonises the water quality standards across the Great Lakes states. In 1991, the Rhine countries also agreed to incorporate into their domestic laws and policies a common set of water quality aims. This set of common standards was more stringent than anything that had existed before in the individual Rhine countries. The two lists of water quality aims can partly be compared.



**Table 2:** An international comparison of current water quality standards (figures in µg/l, unless otherwise indicated; bold numbers express the stricter standard)

	USA	Rhine countries
Arsenic	<b>147.9</b>	40,000 µg/kg
Chromium	<b>10.98</b>	100,000 µg/kg
Mercury	<b>0.0018</b>	500 µg/kg
Dieldrin	<b>0.00041</b>	0.001
Hexachlorobenzene	<b>0.00045</b>	0.001
Endrin	0.036	<b>0.001</b>
Lindane	0.5	<b>0.002</b>
Benzene	310	<b>2</b>
DDT	<b>0.00015</b>	0.001
PCBs	<b>0.0000039</b>	0.0001
Trichloroethylene	370	<b>1.0</b>

Sources: 40 *Code of Federal Regulations*, Ch. 1 (7-1-1996), 640-709 (U.S.); ICPR 1993, 118-120 (Rhine countries).

Table 2 shows that for 7 out of 11 pollutants, American water quality standards are presently stricter than in the Rhine countries. This finding is only suggestive. It does not warrant the conclusion that water quality standards in the United States have always been more stringent. First because it only compares present water quality standards, not those of the past. Second, because it only presents a limited number of water quality standards, leaving out those that are either unique to the two regions or that are calculated differently across the Atlantic. Still, it is a further piece of evidence pointing to the conclusion that America's water protection laws and policies have been stricter than European ones. This finding ties in with the more ambitious legislative aims and more stringent technological standards that have existed in the United States. On the basis of these factors taken together, I feel that it is safe enough to assert that the domestic water policies have actually been stricter in the United States than in the countries through which the Rhine flows.

*Who has been more creative?*

A last element of the puzzle can be formulated thus. The United States government agencies acting to protect the Great Lakes have in general done so in a more inventive way than the

ministries in the Rhine basin. The former had already started to analyse the Great Lakes in terms of an interrelated ecosystem by the early 1970s. In the Rhine area this concept gained currency in governmental circles only from 1980 onwards. Furthermore, U.S. agencies were earlier aware of airborne pollution. For them, this was already a matter of concern in the 1980s, whereas the public servants in the Rhine area have only started to investigate airborne pollution in the last couple of years. In addition, various Great Lakes states have recently started to pioneer with more integrated environmental regulation. That is, these states have developed policies that take into consideration firms' emissions *via* all possible media (air, land, water).<sup>33</sup> Another demonstration of inventive thinking among EPA officials is their decision to issue marketable air pollution permits. This has also been discussed in Europe, but never put into practice. Last, the Remedial Action Plans that are currently being developed in 43 places in the Great Lakes basin are unique experiments with participation of local governments, businesses and environmental groups.<sup>34</sup> It is therefore arguable that the federal and state environmental agencies dealing with the Great Lakes have been more innovative than the ministries in the Rhine countries.

*To summarise:* in the Great Lakes ecosystem, international cooperation has been more extensive, international treaties and domestic laws stricter, policy-making more creative, environmental groups better organised and more influential, the academic community more concerned and active, and the international organisation involved more powerful than in the Rhine basin. All these elements point to just one conclusion: the industrial discharges into the Great Lakes must have been less toxic than the emissions of firms into the Rhine. Still, the opposite has been the case. The question is: *WHY?* Below I will first consider some 'down to earth', common-sense answers, before proceeding with my own account.

## **Nature and economics**

A solution to the puzzle might be sought in nature. One physical difference between the two areas stands out. The Great Lakes are immense bodies of water (containing some 20% of the world's supply of fresh water), while the Rhine is not even Europe's largest river. Also, fewer people live in this bigger region. It could be speculated that these geographic differences have had an effect on the minds of industrialists. Standing at the borders of any Great Lake, one is easily overwhelmed by its vastness. The water rises until the horizon and beyond. Surely a bit of pollution from a firm can not do much harm to such an immense body of water? Such reasoning may have played a role. However, a counterargument can also be construed.

The Great Lakes are not only enormous bodies of water. Unsurprisingly they are also lakes, whereas the Rhine is a river. As a consequence, substances that enter the Great Lakes will stay there for a much longer period. For instance, a drop of water that falls into Lake

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<sup>33</sup> Rabe and Zimmerman 1995.

<sup>34</sup> Hartig and Zarull 1992.

Superior will only reach the Atlantic Ocean after a journey of 191 years. A similar drop of water falling into the sources of the Rhine typically reaches the North Sea after only 77 days. As the Great Lakes have a much longer retention time (to use the technical term), pollutants stay for a longer period in the ecosystem and tend to bioaccumulate. In a process of bioaccumulation, the concentration of chemical substances within living organisms has a manifold increase with every next link in the food chain. The predators on top of the food chain (humans, eagles, salmon, turtles) therefore accumulate a level of concentration of pollution in their bodies that is several thousand times higher than the concentration of pollution in the water. It can be speculated that many people in the Great Lakes basin must have been aware of this process, since it has led to a ban on the sale of various fish from the Great Lakes for several decades. Certainly most leaders of Great Lakes firms must have been aware of the problems related to bioaccumulation. The problem is mentioned in almost any informative brochure on the Great Lakes ecosystem. So, the fact that the Great Lakes are massive lakes, whereas the Rhine is a medium-sized river, cuts both ways. Perhaps it has induced American business leaders to discount the impact of pollution streams from their firms. Equally plausible, though, is the possibility that it has made them aware of certain environmental problems (such as bioaccumulation and sediment pollution) that are greater in lakes than in rivers.

The puzzle could also be ‘wished away’ by pointing out that the Rhine is an exceptionally successful case of environmental protection and cooperation. The Rhine regime has widely come to be seen as an example for other European attempts to restore aquatic ecosystems.<sup>35</sup> Is it fair or even instructive, then, to contrast the environmental protection of the Rhine with that of the Great Lakes? Perhaps the puzzle is merely a coincidence caused by pairing a relatively successful European effort with an ineffective American attempt. What this argument leaves out is that the environmental protection of the Great Lakes is widely seen as one of the most successful protection efforts in the United States - both by actors and commentators. It has been noted that the Great Lakes have been cleaned up to a larger extent than other lakes and rivers in the United States.<sup>36</sup> The international regime for the Great Lakes has also often been held up as an example for other countries to follow.<sup>37</sup> It is therefore legitimate to say that the protection of the Great Lakes has been as much a ‘role model’ in America as the clean up of the Rhine has been in Europe.

Several economic explanations of the puzzle could be proposed. First, it could be hypothesised that the Great Lakes economy has a different composition than the economy of the Rhine watershed. Perhaps manufacturing around the Great Lakes has consisted more of older, technologically less sophisticated industries, as compared to manufacturing in the Rhine region. Typically, older kinds of industries (*e.g.*, steel, mining) are portrayed as more polluting than newer, ‘high-tech’ forms of production. This claim does not seem to be empirically tenable. In fact, if anything, it is the economic similarities between the two

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<sup>35</sup> *The Washington Post*. 27 March 1996. “Sewer of Europe” cleans up its act.

<sup>36</sup> *E.g.*, Vogel 1986, 159.

<sup>37</sup> For example, Renn and Finson 1991.

regions that stand out. Both regions have been motors of the processes of industrialisation since the nineteenth century, specialising in steel and iron production, mining, chemicals, and machinery and equipment. Similarly, since the 1980s both areas have been struggling with the same structural adjustment problems, brought on by the processes of post-industrialisation, post-Fordism, and rise of the East Asian Newly Industrialised Countries. As a result, in my view there is not much mileage to be had from pointing to differences in sector composition between the two regional economies. This also means that an argument in terms of different growth rates in the two regions would be unconvincing. Both regions have experienced a major, and roughly equal, industrial decline in the 1970s and 1980s, followed by stabilisation in the 1990s.

Another economic argument makes more sense. When I wrote before that all the countries involved have developed basically similar water protection programs, I did not tell the ‘whole truth’. There is one important difference between the programs. In all the countries through which the Rhine flows, firms have had to pay a certain amount of money *for each unit of pollution* that they discharge into open waters. By contrast, in the United States, corporations have only paid a fixed amount of money for obtaining a pollution permit. This argument can probably stand on its own. At least one thorough study has shown the effectiveness of a tax on water pollution.<sup>38</sup> It is a clear difference between the two cases and its causality points in only one way: more intense efforts to reduce pollution in the Rhine watershed. The absence of a water pollution tax within the United States is therefore one factor that helps explain the puzzle. As such, it functions in addition to the institutional factors that I will highlight below.

### **A preliminary answer: feet-dragging versus voluntary action**

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 things. In America, water protection laws must not have been implemented as well as in the Rhine countries, and/or voluntary investments in water protection (*i.e.*, investments not necessitated by the law) must have been more extensive in the Rhine valley than in the Great Lakes watershed. In reality, both developments have taken place simultaneously.

David Vogel has documented the slow pace with which the Clean Water Act has been implemented in the United States.<sup>39</sup> This Act has been poorly implemented for a number of reasons. At first (*i.e.*, in the beginning of the 1970s) EPA was simply overwhelmed by the numerous tasks involved in implementing the Clean Water and Air Acts. Both laws called upon the newly created EPA to develop and scientifically justify a great many, highly detailed quality standards and effluent guidelines. The budget of the agency was not

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<sup>38</sup> Bressers 1983.

<sup>39</sup> Vogel 1986, 164-66; see also Adler, Landman and Cameron 1993.

sufficient to meet these tasks before the required deadlines. Nor did regulated firms accept the strict standards laid down by EPA and fought these regulations in all possible ways: by lobbying Congress and the White House, and by suing EPA in courts. One interviewee working for EPA estimated that about 90% of all water regulations developed since the 1970s has been challenged in court. The court cases have sometimes taken years to be settled. The lobbying efforts led to several reversals of EPA policies by Congress. And even when EPA water regulations were supported by the courts and Congress, the agency sometimes had to force both firms and states to comply with these regulations by strict monitoring and legal action. All these activities slowed down the implementation of the Clean Water Act. In fact, in 1989 EPA conceded that over two-thirds of the nation's 15,600 waste water treatment plants failed to comply with the standards of the Clean Water Act.<sup>40</sup>

In contrast, the firms along the Rhine have taken many voluntary measures to clean up their effluents. In especial the large chemical concerns made sure that their water protection measures remained far ahead of legislative developments. The following comparison shows this.

In 1991, the ICPR adopted 59 water quality standards for the whole Rhine basin that were stricter than the water quality standards that had been used within the riparian countries. Several of these standards concern chemicals that are only released by farms. These standards are not of relevance here. For 22 of the remaining substances, the ICPR and the water supply companies along the Rhine have assembled data. The following table compares the strict standards of 1991 with the actual water quality in the mid-1980s.

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<sup>40</sup> Okaru 1994, 215.

**Table 3:** A comparison between water quality standards for the Rhine and the actual water quality of that river at Lobith (both in µg/l, unless otherwise indicated). The lower value is expressed in bold.

	Water quality standards of 1991	Actual water quality in mid-1980s
Mercury	0.5 mg/kg	<b>0.00005 mg/l</b>
Cadmium	1.0 mg/kg	<b>0.0001 mg/l</b>
Chromium	100.0 mg/kg	<b>0.008 mg/l</b>
Copper	50.0 mg/kg	<b>0.006 mg/l</b>
Nickel	50.0 mg/kg	<b>0.005 mg/l</b>
Zinc	200.0 mg/kg	<b>0.048 mg/l</b>
Lead	100.0 mg/kg	<b>0.005 mg/l</b>
Arsenic	40.0 mg/kg	<b>0.002 mg/l</b>
DDT (various compositions)	0.001	< <b>0.001*</b>
Endosulfan	0.001	< <b>0.001*</b>
α-HCH	0.1	< <b>0.01</b>
γ-HCH	<b>0.002</b>	0.02
Pentachlorophenol	0.1	<b>0.03</b>
1,2-Dichloroethane	<b>1.0</b>	2.3*
Trichloroethene	1.0	<b>0.1</b>
Trichloromethane	0.6	<b>0.2</b>
Tetrachloromethane	1.0	<b>0.2</b>
Chloronitrobenzene	1.0	<b>between 0.04 and 0.09*</b>
Trichlorobenzene	0.1	<b>0.03*</b>
Hexachlorobenzene	0.001	< <b>0.01</b>
PCBs	<b>0.0001</b>	0.006
Ammonium-N	<b>200</b>	670

Sources: ICPR 1993, 118-20 (Rhine water quality standards Rhine); RIWA (*Samenwerkende Rijn- en Maasbedrijven*, the Dutch member-organisation of the IAWR), 1986, 80-85; ICPR 1985, 196-97. An asterisk (\*) indicates a value taken from the ICPR year report. The ICPR figures refer to the year 1985. The other numbers (taken from the IAWR/RIWA publication) concern the year 1986.

Table 3 shows the amazing extent to which industrial firms along the Rhine have made voluntary investments in water protection. The table shows that already in the mid-1980s the levels of all but 4 of the 22 priority substances in the Rhine water were lower than the strict water quality standards adopted by the governments in 1991. This result is all the more impressive when one realises that a large part of the data in table 3 refer to the year 1986. This was the year in which many accidental spills occurred, including the Sandoz-disaster.<sup>41</sup> Table 3 leaves room for only

<sup>41</sup> RIWA 1986, 24-34.

one conclusion: the discharges into the Rhine had already been greatly and *voluntarily* reduced by the mid-1980s.

So, two opposing images emerge. In the Rhine valley, the relations between firms and government departments concerning water protection issues have (relatively speaking!) been rather consensual. Firms have frequently invested more in water protection than government policies have required, while ministries have often made sure not to adopt regulations that would have been viewed as grossly unfair by the business sector. In the U.S. part of the Great Lakes basin, the relationships between firms and government agencies have been more strenuous. Corporations have made fewer voluntary measures, and have usually attempted to reverse government policies. These developments form an initial answer to the puzzle of this essay: *in the Rhine basin industrial effluents have been less toxic than in the Great Lakes watershed, because Rhine firms have made extensive voluntary investments in water protection, while Great Lakes corporations have tried to halt implementation of U.S. water laws.*

Telling in this respect are the different responses that American and West European business executives gave to my question ‘why has your firm invested in water protection measures?’. In the United States most executives literally and immediately answered: ‘to keep us out of jail’. The other American business employees all gave the same answer, using slightly different words. By contrast, the typical reaction of representatives from Rhine firms involved a lengthy exposé of the social responsibilities of enterprises, the need to preserve present environmental values for future generations, the wish to live in harmony with surrounding communities, and so on. These factors were only seldom mentioned by Great Lakes managers. In short, from the interviews it appears that Great Lakes business leaders have been much more single-mindedly focused on company profits and shareholder value (the infamous ‘bottom line’), while managers in the Rhine region have also taken other values into account. These different motivations are important elements of the more adversarial politics of water protection in the Great Lakes area and the more consensual politics in the Rhine valley.<sup>42</sup>

### **An institutional explanation**

The finding above begs the question: why have only the Rhine companies been willing to make extensive voluntary investments in water protection, and not the Great Lakes firms as well? My answer to this question will be couched in institutional terms. I will describe how various sets of institutions in the United States have destroyed any willingness that Great Lakes firms might have developed for taking voluntary (or even obligatory) water

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<sup>42</sup> My findings are compatible with those of Wilson 1985; Brickman, Jasanoff and Ilgen 1985; Badaracco 1985; and Vogel 1986. These studies also attest to the antagonisms that have characterized American environmental politics, as compared to the relatively more cooperative European and Japanese processes.

protection measures. At the same time, I will show how a number of European institutions did not block the willingness of corporations to make large-scale voluntary investments in pollution prevention. I will also consider developments at the international level. I will argue that certain elements of the international regime for the Great Lakes have tended to add to the antagonistic pressures emanating from domestic institutions.

I will follow Ronald Jepperson's understanding of the term institutions.<sup>43</sup> In his view, institutions are collective patterns of thought and behaviour that people take for granted. In Jepperson's words: their persistence is:

not dependent, notably, upon recurrent collective mobilisation, mobilisation repetitively reengineered and reactivated in order to secure the reproduction of a pattern. That is, institutions are not reproduced by 'action', in this strict sense of collective intervention in a social convention. Rather, routine reproductive procedures support and sustain the pattern, furthering its reproduction - unless collective action blocks, or environmental shock disrupts, the reproductive process.<sup>44</sup>

Most people accept institutions simply as the ways in which things are done. They need not morally condone or prefer existing institutions, but will still subject to them, albeit sometimes grudgingly. Institutions, in this view, are background variables. They are widespread and long-standing patterns of thought and behaviour that steer and shape the more fleeting daily actions and ideas of people, including their political ideals and positions. In treating institutions as background variables, my research falls outside of what Hall and Taylor have dubbed the "sociological version of the new institutionalism". In considering institutions to be more than formal procedures, it also remains outside the purview of the "rational version of the new institutionalism". In fact, my study falls squarely into Hall and Taylor's third category: the "historical version of the new institutionalism", which treats institutions as background variables, different from, and influencing, the mindsets, policy beliefs, moralities and interests that people have.<sup>45</sup> In this study, institutions work on the rifts that divide the various actors involved in environmental politics. In some institutional settings, these rifts are opened up, and grow into abysses. Communication and trust between actors, let alone common ground, become very difficult to achieve. Everybody sticks to their singular perspective, and defends their perceived interests as hard as they can. In other institutional settings, bridges can still be built across the cracks that divide organisations. Mutual understanding of each other's concerns and perspectives becomes achievable under these circumstances.

Which cracks, then, have divided the numerous organisations involved the protection of both the Rhine and the Great Lakes? A content analysis of the 101 interviews I have

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<sup>43</sup> Jepperson 1991.

<sup>44</sup> Jepperson 1991, 145.

<sup>45</sup> Hall and Taylor 1996.



undertaken in both cases (see the appendix) reveals clear disagreements concerning both goals and means of water protection between the involved business firms, government agencies and environmental groups. Companies tend to underplay the effects that chemicals can have on watersheds. They often do not believe that small amounts of a chemical substance within a water basin can have harmful effects on flora and fauna. Therefore, they tend to endorse only those water protection measures that are based on scientific certainty. And even if the toxicity of a chemical is scientifically established, corporations will often still insist that any decision to ban a substance will also be based on a cost-benefit analysis. To firms, it does not make a lot of sense to invest in water protection in one place, if much larger ecological improvements can be had in other places for less money. With regard to the means of water protection, companies tend to reject strict command-and-control policies and the imposition of technology standards, which they often see as too inflexible and static. All of this is very suspect in the eyes of environmental groups. The latter tend to believe that most chemicals are harmful to the environment, even in small doses. Only after it has been scientifically established that a chemical substance does not impact flora and fauna should firms be allowed to use and discharge the chemical. This is an absolute version of the "precautionary principle". Regarding means, environmental groups often plead for a complete reorganisation of society along more "ecocentric" lines. In the meantime, they usually prefer strict command-and-control policies. Government agencies often, but not always, take up a middleposition between these two extremes. Public servants acknowledge that scientific certainty about the toxicity of all chemicals released into open waters is an impossibly ambitious aim. Instead, they often opt for "objective risk analysis", i.e., an attempt to calculate the health and environmental risks of releasing chemicals into the aquatic environment. Typically, this leads to a list of suspected chemicals that is bigger than that used by firms and smaller than that favoured by environmental groups - a less absolute version of the precautionary principle. Also, although they are sympathetic to command-and-control policies, they are also willing to entertain other policy instruments, such as market-based solutions.

Broadly speaking, these differences of opinion have been prevalent in both the Rhine valley and the Great Lakes basin.<sup>46</sup> However, two sets of institutions, as well a string of decisions taken by the IJC, have greatly widened these cracks in the case of the Great Lakes, as compared to events in the Rhine basin. The politics of the protection of the Great Lakes have therefore been very conflictual, which has destroyed a large part of the willingness of U.S. firms to invest in the restoration of the Lakes, voluntarily or otherwise. Below, I will first discuss these two sets of adversarial institutions, the values and practices that make up "American exceptionalism" and the relations between the executive, judiciary, legislature, citizens' groups and business firms in the United States, as well as show how these

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<sup>46</sup> Two differences were conspicuous. EPA tended to side more with the U.S. environmental groups than the governmental agencies in the Rhine countries with the European environmental groups. Furthermore, the European environmental movements appeared much more bent on the overhaul of capitalism than their American counterparts.

institutions have impaired the protection of the Great Lakes, as compared to the Rhine river. Thereafter, I will bring on the IJC.

### **American exceptionalism**

Compared to the populations of European and Asian countries, Americans are 'individualistic, anti-statist, populist, and egalitarian'.<sup>47</sup> More than other nations, Americans value liberty, equality, individualism, constitutionalism and democracy.<sup>48</sup> These are the roots of 'American exceptionalism' - a phrase coined by de Tocqueville as far back as 1835.<sup>49</sup> The American nation does not define itself in primordial terms, but in terms of its attachment to achieving the ideals of liberty, equality, individualism and constitutional democracy. As such, Americans are moralistic utopians.

The basic American values are not fleeting. Despite tremendous cultural change of all sorts, the main components of American exceptionalism have been in place for several centuries. It may be argued that the elements that make up 'America's exceptionalism' are not necessarily compatible. Still, they are held together by one overriding passion: a dislike and distrust of central government. This anti-authoritarian thrust is what is common to all the different elements of the American Creed (to use Huntington's preferred phrase).

How can American exceptionalism be linked with the comparatively adversarial nature of water protection politics in the United States? I see at least two ways. The story<sup>50</sup> begins of course with the rise of concern for environmental issues, and the environmental movement, from the late 1960s onwards. These developments did not only take place in the United States, but also in Western Europe and Japan. What was different in America was that the demands for a cleaner environment were not accompanied by a desire to expand government. The anti-statism within both the environmental groups themselves and other organisations prevented this. Thus the paradoxical situation occurred in which the U.S. government was asked to bring about many far-reaching changes (in order to save the environment), without being offered sufficient means to do so. This paradox has been particularly relevant for the implementation of the Clean Air and Clean Water Acts. During the formulation of both these acts, environmental organisations effectively lobbied Congress. As a result, both acts included very strict environmental standards. The acts also increased the budget and responsibilities of EPA, but not nearly enough to implement and enforce the unrealistically strict environmental goals. This process is a vicious circle, one of the several that have kept American environmental politics adversarial. Forced to achieve impossibly strict environmental aims, and not having enough means at its disposal,

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<sup>47</sup> Lipset 1991, 16.

<sup>48</sup> Huntington 1981, 33.

<sup>49</sup> Besides de Tocqueville 1991 [1835], the classics on American exceptionalism are Hartz 1955; Huntington 1981; Shafer 1991; and Lipset 1996.

<sup>50</sup> Told in Vogel 1986, 253-54; Wildavsky 1991; and Kagan 1994.

government can only fail. This process fuels a general feeling among citizens' groups that bureaucracy is not capable of getting things done and should be limited. In addition businesses, also faced with impossibly high demands on them, try to get legislation repealed or try to circumvent the law. This adds to the suspicions of the motives of industry harboured by environmentalists, and increases their calls for stricter legislation and stricter controls. It also induces EPA to be 'tougher' on industry, which further increases resentment among business executives. Setting off these polarising processes is one way in which American exceptionalism has contributed to adversarial environmental politics in the United States.

Another way is by holding up an ideal of rugged individualism. 'Standing up for yourself' and 'holding your own' are valued cultural traits in the United States. These beliefs are not conducive for a dialogue among organisations with divergent views of environmental issues. They also do not stimulate acceptance of the policy goals of government. As Huntington writes:

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.<sup>51</sup>

In sum, the values and practices that make up the American creed have in at least two ways contributed to the occurrence of American environmental politics that have been more antagonistic than in the Rhine countries. This is an important piece of the puzzle of this essay, as the antagonistic policy processes have made Great Lakes firms less willing to undertake voluntary or even legally mandated investments in water protection than their competitors from the Rhine valley. A second missing piece of the puzzle consists of the intricate system of checks and balances that have shaped the relations between the executive, legislature, judiciary, firms and environmental groups in the United States in a way different from Western Europe. This system of checks and balances is of course closely related to the values of American exceptionalism,<sup>52</sup> but (as I will argue on the basis of the case of Switzerland) it has also had an independent impact on the creation of adversarial environmental politics.

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<sup>51</sup> Huntington 1981, 56.

<sup>52</sup> Dahl 1956.

## The executive and judiciary

The distrust and disagreement among organisations that have been characteristic of American environmental politics have been fuelled by the ample opportunities that non-governmental actors have to challenge laws and administrative policies through the courts.<sup>53</sup> In Europe these opportunities have been much smaller. Here I will first describe the grounds on which U.S. citizens and organisations can request judicial review of laws and government policies, as well as show that these opportunities have been more limited in the Rhine countries.<sup>54</sup> Thereafter I will consider how these differences have made American environmental politics more conflictual as compared to the European situation.

One of the main ways in which Americans have tried to reign in governmental power is by offering courts of law the possibility of constitutional review. In the United States the judiciary has the right to annul laws that have been adopted by Congress on the grounds that these acts are unconstitutional. U.S. private citizens and organisations can ask courts to rule on the constitutionality of legislation. A quite different situation exists in the Rhine countries. Generally speaking, in these countries the opportunities of constitutional review are quite limited, as the primacy of parliament in deciding on the adoption of laws is seen as a fundamental democratic principle. In the Rhine countries, the activities of courts have been much more focused on assessing the proper implementation of legislation in specific situations than on deciding whether laws should have been adopted in the first place.

Constitutional review is one element that gives U.S. judges a bigger political role than their European colleagues, and administrative review is another. In the United States, courts have received the right to assess many aspects of the policies and activities of governmental departments - more so than in the Rhine region. American courts have been able to rule on how governmental agencies have implemented acts (and especially environmental acts) adopted by Congress. Both individual citizens and citizens' organisations have had standing in these courts. Again, the situation has been different in the Rhine countries. In these countries the role of legal courts in administrative review has been more limited.

In all, it can be said that the legal possibilities for judicial review of administrative action have been more restricted in the Rhine countries than in the United States. Since the late 1980s, however, this picture has changed somewhat. Since that time a convergence of civil law has taken place on both sides of the Atlantic.<sup>55</sup> In particular, the possibilities for both citizens and interest groups to seek judicial review of administrative action have increased in European countries, including the Rhine countries. Partly, this has been the result of the

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<sup>53</sup> Wilson 1985, 162.

<sup>54</sup> This part of the text is based on the following publications: Blankenburg 1996; Blankenburg and Bruinsma 1991; Holland 1988a; Holland 1988b; Jacob 1996; Knoepfel 1997; Provine 1996; and Rademaker 1988.

<sup>55</sup> Galanter 1994, 669-75; Wiegand 1996.

adoption of the European Convention on Human Rights, as well as the extension of European Community law.

But more important than the formal provisions for administrative review are the actual practices, habits and values of legal actors.<sup>56</sup> In the United States, an active political role by the courts has been widely viewed as legitimate and necessary. Judicial review is an important element in the American system of checks and balances that aims at limiting central authority and preventing a tyranny of the majority.<sup>57</sup> By contrast, in Europe the power to make or repeal legislation has *grosso modo* been seen as the prerogative of popularly elected parliaments. According to European notions of democracy, parliaments express the will of (a majority) of the population within a country. Meddling in the legislative process by the judiciary is generally seen as undemocratic and therefore unwanted - also by the courts themselves.

Also relevant are the different legal traditions in both areas. Legal actors in the United States have adhered to the common law tradition, while legal actors in continental European countries have followed the civil law tradition. Under the common law tradition, individual judges are more independent. Their verdicts are somewhat more based on personal interpretation and evaluation of existing legislation. This custom creates room for judges to take decisions that are at least to some extent based on their personal political convictions. The civil law tradition is more exclusively concerned with building up an intricate, internally consistent and hierarchical system of court decisions. Under the civil law tradition, judges dovetail their decisions with existing jurisprudence. This practice makes it even further unlikely that continental European courts will issue verdicts that are at odds with existing laws, policies and jurisprudence.

The alternative career patterns of judges found in the United States and the Rhine countries reinforce these differences. In the United States, the appointment of a judge is most often partly based on his or her political preferences. Judges are either selected by the President, the U.S. Senate or state authorities, or are elected by the public. In all these cases, the political beliefs of the candidates are well-known, and those who select a judge expect him or her to be guided by these political preferences. These practices form a huge contrast with continental Europe. In the Rhine countries, the training and career of judges is meticulously planned by the Ministries of Justice. In this socialisation process, emphasis is put on the political 'neutrality' of courts. Deviants are side-tracked. Again, this practice prevents judges on the continent of Europe from performing a partisan political role.

All of these legal practices, attitudes and values taken together mean that the political role of the judiciary in European countries has remained more limited than in the United States, despite increasing legal provisions for administrative review by courts in Europe. This has been particularly pertinent to the environmental politics in both areas. As stated above, the U.S. Clean Water and Air Acts of the early 1970s made it possible for interest groups to

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<sup>56</sup> This point is forcefully made in Blankenburg and Bruinsma 1991; and Blankenburg 1996.

<sup>57</sup> Galanter 1996, 97-100.

challenge the water and air protection policies developed by EPA. These opportunities have been eagerly taken up by both environmental organisations and business associations. During the interviews, an EPA official estimated that EPA's Administrator usually has about 300 law suits against her at any particular moment in time. The expansion of environmental legislation in the Rhine countries has also resulted in increased opportunities for interest groups to sue the authorities responsible for environmental protection. However, these increased opportunities for administrative review by the courts have been created much later than in the United States. For instance in Switzerland environmental organisations received the right to sue governmental organisations only in 1995. Moreover, the whole legal tradition within the Rhine countries is biased against a comprehensive and aggressive use of these new powers of judicial review. As a consequence of all these factors, court cases have played a much bigger role in the development of environmental policies in the United States than in the Rhine valley.

How has this contributed to more adversarial environmental politics in America? First, American corporations simply do not have to accept the protection policies proposed by EPA. They can always seek reversal of these policies in court. Such court cases often take several years. In the meantime firms can delay investments in environmental protection. This is of course much resented by EPA, which also runs the risk of being sued by environmental organisations for not meeting environmental goals on time. As stated above, the water protection policies developed by EPA have often been challenged in the courts. Most often these legal challenges have not led to reversals of EPA's water protection policies. However, much valuable time has been lost during court proceedings.

Furthermore, court cases themselves are not exactly conducive for a coming together of minds. During law suits 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, representatives of firms will testify that in their opinion there is no scientific base whatsoever for EPA's protection policies. EPA officials will argue the exact opposite. These polarising tendencies of court cases are even stronger in the (Anglo-Saxon) common law tradition than in the (continental European) civil law tradition. In the common law tradition, courts are less inquisitorial. That is to say, judges rely more on arguments offered by the opposing parties, and do not seek to reconstruct events by themselves. This makes it attractive for litigants to phrase their arguments in the most undiluted manner. In the civil law tradition, judges are more active in accumulating evidence on their own behalf. They look for external evidence not presented in court, and question the parties before them in detail. This induces litigants to be more cautious, as they do not want to be viewed by the court as unreasonable. As a result, the civil law tradition tends to polarise opinions of opposing parties somewhat less than the common law tradition.

For this variety of reasons, the institutions that have regulated the relations between the judiciary and the executive in the United States have contributed to the distrust and disagreements among public and private organisations that have characterised American environmental politics, including the politics of water protection.

## The executive and legislature

The institutions shaping the relations between the executive and the legislature in the United States have also been quite different from those in the Rhine states. This set of institutional differences has further contributed to the fact that American environmental politics have been more antagonistic than the politics of environmental protection in the Rhine area. The most relevant difference between the political systems of the United States and the Rhine countries can be formulated thus. In the United States there is a presidential system, while most of the Rhine countries have a parliamentary system.<sup>58</sup> To be more accurate: the United States has a 'pure' presidential system, and the Netherlands and Germany have 'pure' parliamentary systems. The government systems of France and Switzerland are hybrids of these models.

A presidential system displays the following characteristics: (1) both the executive and the legislature are chosen by the public in separate elections; (2) the executive is not dependent on legislative confidence, i.e., the government cannot be forced to resign with a vote of no confidence in parliament; (3) executive power is concentrated in one person. A presidential system is to a large degree based on the ideal of a separation of powers. It pits government against parliament. It is therefore not surprising that this political system has been favoured by the anti-hierarchical U.S. citizens. 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 by a vote of no confidence; (3) executive power is exercised in a collegial manner, *i.e.*, ministers take decisions jointly and are therefore jointly responsible. In a parliamentary system, the executive and legislature cooperate more closely. The political systems of Germany and the Netherlands are parliamentary.

In a number of ways presidential systems add fuel to the fires of environmental politics. This will be the case especially when the political colour of the majority in parliament is different from the political colour of the government (which is much more likely to occur in presidential systems than in parliamentary ones). First, in a presidential system parliamentarians tend to be less concerned with the practicalities and difficulties of implementing legislation. They bear no responsibility for governmental implementation of laws. In fact, if government fails to achieve the aims of legislation passed by parliament, the latter acquires a stick with which to beat the former. Thus, it can be an attractive strategy to adopt legislation that incorporates impractical, extreme measures. This is especially true in a situation where the parliamentary majority belongs to a different political party from the executive. Such lack of parliamentary responsibility was taken to an extreme with the adoption of the U.S. Clean Water Act in 1972.<sup>59</sup> Under pressure from their constituencies and environmental organisations, the Democratic majority in Congress adopted legislation

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<sup>58</sup> Lijphart 1992.

<sup>59</sup> Brickman, Jasanoff and Ilgen 1985, 70-72.

for water protection that included ‘stringent timetables that ranged between the merely unrealistic and the wholly fantastic’.<sup>60</sup>

Second, a presidential system gives interest groups an extra opportunity to challenge government policies that affect them. In presidential systems there tends to be a struggle for power between the executive and legislative. In the United States, the committees of Congress try to keep a tight rein on government agencies by holding frequent reviews of their actions and policies. This offers interest groups an additional opportunity (besides the courts) to have government policies repealed. Private organisations, such as business associations and citizens’ groups, frequently lobby members of the U.S. Congress, and testify before the various Senate and House committees. This further stimulates interest groups not to accept governmental policies and adds to the acrimony between governmental and non-governmental actors.<sup>61</sup> These processes have been prominent in American water protection politics. The Clean Water Act has been the subject of regular reviews by the U.S. Senate. During these reviews, environmental groups, business representatives as well as EPA officials have offered their opinions. As with court cases, Senate hearings induce organisations to present their views as strongly as possible.

In parliamentary systems, private actors have fewer opportunities to effect a reversal of government policy through lobbying the legislature. This is because in parliamentary systems public power is much more concentrated in the executive than in the legislature. Various factors account for this. In parliamentary systems, a majority of the legislature chooses the cabinet. The parliamentary majority therefore acquires a large stake in the survival of the government and in defending its policies against the attacks of the opposition parties. Furthermore, in parliamentary systems the leaders of the governing political parties are usually found in the cabinet and not in parliament. In addition, the legislature in a parliamentary system usually has less (organisational and financial) means at its disposal for independent research. For these, and other reasons, in parliamentary systems the right to develop laws and public policies is mainly exercised by the executive and not the legislature. It therefore does not make much sense for companies to lobby parliament in search of environmental policy change.

A third argument has to do with the formation of coalitions. In presidential systems, and certainly in the United States, there is usually no coalition formation between political parties. Normally, the executive is fully dominated by one political party. In parliamentary systems, it is more common that the executive is made up of several political parties. In both the Netherlands and Germany there has not been a single government since 1945 made up of only one party. This difference also helps to explain why environmental politics in the United States have been characterised by more strife. Under coalition governments, it is more likely that the cabinet includes at least one political party that represents the viewpoints of the business community. As a consequence, the business community can rest assured that their interests and views will be taken into account in the development of

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<sup>60</sup> Brickman, Jasanoff and Ilgen 1985, 72.

<sup>61</sup> Wilson 1985, 162.



environmental policy. In presidential systems, the executive is usually less diverse. In such polities, governments will be more sympathetic to either the viewpoints of the business community or the ideas of environmental groups. In the former case, the environmental groups will feel underrepresented by the executive and will seek influence in other places. In the latter case, the business community will feel more 'left out in the cold'. Either way, polarisation of environmental politics will be the outcome.

A last argument relates more to executive-executive than to executive-legislature relations. In parliamentary systems, there is 'collegial' government. Policy decisions are often taken jointly by cabinet ministers - typically after a process of negotiation and consultation among officials from a variety of ministries. This inter-ministerial consultation again reassures the business community that their perceived interests will be taken into serious consideration. In the Rhine countries, especially the Ministry of Economic Affairs will represent the standpoints of business groups in the formation of environmental policies.<sup>62</sup> The Ministry of the Environment is often more open to the arguments of environmental groups. This further reduces the need for private actors to agitate in parliamentary systems.

In presidential systems, the situation is different again. The governing style is not collegial, but concentrated in one person. Governmental departments and agencies develop their policies in relative isolation from each other, and then ask for permission to implement these policies from the head of government. In the case of water protection EPA is the 'lead agency' in the United States. In developing its water protection policies, it seldom negotiates with other government agencies. It only seeks the approval of the White House for its intended policies. Again, this polarises American water protection policies. EPA's proposals take solely environmental concerns into consideration. Their plans are not diluted by the views of other departments. Business representatives as well as environmental activists lobby the President to get EPA's proposals blunted or left in tact. These lobbying efforts again have strong centrifugal effects.

The four factors mentioned above immediately help to explain why American water protection policies have been more conflictual than water protection efforts in the Netherlands and Germany. This is the case as the polity of the United States has resembled a pure presidential model, whereas the polities of the Netherlands and Germany have come close to a pure parliamentary model. Switzerland and France are different cases, as the polities of these countries are hybrids of the two types. The Swiss polity combines two characteristics of the parliamentary model with one property of the presidential model.<sup>63</sup> The former two are collegial government and parliamentary selection of the government. The latter is the fact that the Swiss government does not need to rely on legislative confidence. But this one deviation from the pure parliamentary model only strengthens the Swiss executive vis-à-vis the legislature. It certainly does not pit parliament against government, nor does it offer private actors any chance to seek redress of government

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<sup>62</sup> Müller-Brandeck-Bocquet 1996, 38.

<sup>63</sup> Lijphart 1992, 5-6.

policies in the Swiss parliament. As a result, the four factors spelled out above are also relevant to U.S. - Swiss differences in water protection politics.

Something similar applies in the French case. The French political system of the Fifth Republic is Janus-faced. When the political party of the president holds a majority in the *Assemblée*, the French system resembles more the parliamentary model. When the parliamentary majority opposes the president, the French polity comes closer to the presidential model.<sup>64</sup> But even during its presidential phases, French environmental politics are much less affected by controversies between the government and parliament than American environmental policy processes. The reason for this is simple. The constitution of the Fifth Republic incorporates a number of measures that aim to reduce the control of the parliament over the activities of the government.<sup>65</sup> In France, the position of the legislature is much weaker than in the United States or any of the other Rhine countries. As a consequence, interest groups can not reasonably hope to change governmental policies through pressure on the *Assemblée*.

### **The executive and business corporations**

A missing link in my explanation concerns the institutions that shape the relations between government departments and business firms in both the United States and the Rhine valley. Above, I discussed the varying extent to which American and Rhine corporations can influence government policies in indirect ways - through the courts, the legislature and the head of state. But the direct links that have existed between government departments and firms are an important part of the story as well. These direct links have been organised quite differently on both sides of the Atlantic. First, I will consider the general ways in which business-government relations have been organised in the two areas. Thereafter, I will look at business-government relations regarding environmental protection. These considerations will offer me several additional arguments with which to explain why Rhine companies have made more investments than were legally required, while Great Lakes firms have resisted the implementation of water protection laws.

According to David Vogel, business executives in the United States have held quite different views on the proper role of government than have their counterparts in Europe. As he puts it: 'the most characteristic, distinctive and persistent belief of American corporate executives is an underlying suspicion and mistrust of government.'<sup>66</sup> Actually: 'businessmen are more anti-statist than virtually any other major interest in American society.'<sup>67</sup> By contrast: 'there is in fact relatively little principled opposition toward strong government by

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<sup>64</sup> Lijphart 1992, 8. He calls the French system 'semi-presidential'.

<sup>65</sup> Müller-Brandeck-Bocquet 1996, 39-40.

<sup>66</sup> Vogel 1996, 29.

<sup>67</sup> Vogel 1996, 48.

French, German, or Japanese businessmen.’<sup>68</sup> These divergent views on how the political economy should be organised are both cause and effect of regional variations in the institutions shaping the relations between firms and the executive.

In many European countries, corporatism has been dominant for long stretches of time. According to Philippe Schmitter, corporatism is ‘a system of interest representation in which the constituent units are organised into a limited number of singular, compulsory, non-competitive, hierarchically ordered and functionally differentiated categories, recognised 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.’<sup>69</sup> In a corporatist political economy, private actors are represented in the political process by a limited number of relatively stable and large interest associations. Firms are represented by employers’ organisations, employees by labour unions. These interest associations negotiate with each other (*e.g.*, over the wage level within an industry or over the maximum amount of working hours a week). These negotiations usually take place under the watchful eye of the government. The interest associations typically try to find a consensus among themselves that is also acceptable to their own members and to the government. As such, the interest associations in a corporatist economy often ‘deputise’ for the executive. The outcomes of the negotiations between the interest associations are usually endorsed by the government and thereby become binding on all private actors, even on those who do not want to be represented by an interest association. 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’.<sup>70</sup> It requires a strong government, as well as a limited number of authoritative interest associations.

The specifics of the corporatist model have differed from country to country and time to time.<sup>71</sup> Despite these fluctuations, the political economies of Germany, the Netherlands, and Switzerland have usually been seen as clear examples of the corporatist model, certainly since the Second World War.<sup>72</sup>

Whether France has a corporatist system of interest representation can be doubted. For one, the French state seems too dominant and interventionist for a corporatist system to work well. In addition, the French labour unions as well as business associations have remained too fragmented and divided for corporatist institutions to work. Last, in France leaders of business and labour have often not been able to find even a modicum of consensus.<sup>73</sup> Still,

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<sup>68</sup> Vogel 1996, 63.

<sup>69</sup> Schmitter 1979, 13. On pp. 20-22 he distinguishes between ‘state’ and ‘social’ corporatism. I would briefly like to note that when I write ‘corporatism’, I mean ‘social corporatism’.

<sup>70</sup> Schmitter 1979, 15.

<sup>71</sup> Schmitter 1989; Schmitter and de Grote 1997; Lehmbruch 1996.

<sup>72</sup> Lehmbruch 1982; 1993; 1996; Streeck 1982; Katzenstein 1984; 1989; Lijphart and Crepaz 1991.

<sup>73</sup> Lehmbruch 1982, 22-23.

Lehmbruch has called the French political economy a form of 'weak corporatism'.<sup>74</sup> Other authors, though, disagree.<sup>75</sup>

How does all of this tie in with the voluntary investments in water protection made by firms in the Rhine area? The argument is certainly not that environmental politics in the Rhine countries have proceeded along corporatist lines (with environmental organisations taking the place of labour unions). As I will argue below, this has not at all been the case. The effects of corporatism on environmental politics, I think, have been more indirect. In all Rhine countries (except France) corporatism has familiarised firms with a form of self-regulation. In a corporatist regime, firms voluntarily agree to take measures that are viewed as desirable or acceptable by the executive. This is exactly what has taken place along the Rhine river. Firms have made investments in water protection that were not strictly required by the government, but were still deemed desirable by the latter. In addition, corporatism has created the organisational means through which industry-wide environmental policies can be coordinated by companies. The business associations that are an essential part of any corporatist system can fulfil such a role. This seems to have been especially important in Germany. The German Association of the Chemical Industry (*Vereinigung der Chemische Industrie* - VCI) has been an important motor behind the massive investments in water and air protection undertaken by the chemical firms in Germany.<sup>76</sup>

The political economy of the United States has been organised on a quite different basis. Corporatism has never taken root in America, as it is too much based on hierarchical principles. The U.S. government has been among the least interventionist governments in the capitalist world. It has never had an income policy, no wage-price controls, and no national economic planning. The degree of state participation in production is smaller in the United States than in virtually any other nation in the world. Given this, it is unimaginable that the U.S. government would ever attempt to create a corporatist system. In addition, American business leaders have been too independent to accept the formation of authoritative interest associations. In the United States a lower percentage of corporations has joined a business association than in Europe. American business associations have also had far less influence on their members than European ones. Something similar holds for employees. Only a small percentage of American workers has been willing to be represented by a union - a much smaller number than in the Rhine countries. In conclusion, none of the three actors that are necessary for a corporatist system (a strong government, as well as well-organised and representative business associations and labour unions) have existed in the United States.<sup>77</sup>

Instead of corporatism, the political economy of the United States has been much more characterised by pluralism. Schmitter has defined pluralism as 'a system of interest representation in which the constituent units are organised into an unspecified number of

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<sup>74</sup> Lehmbruch 1982, 22.

<sup>75</sup> Lijphart and Crepaz 1991, 238.

<sup>76</sup> Allen 1989, 174-76.

<sup>77</sup> Wilson 1982.

multiple, voluntary, competitive, nonhierarchically ordered and self-determined (as to type or scope of interest) categories which are not specially licensed, recognised, subsidised, 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'.<sup>78</sup> In a pluralist system, individual actors (be they firms or persons) fend for themselves. They will form temporary alliances with other individual actors if this seems to further their self-interest. But the alliance will immediately unravel, as soon as it can no longer serve this self-interest. Thinking and acting in terms of a 'group interest' is much less developed in a pluralist system than in a corporatist system. Under pluralism, decision-making is highly fragmented. This system of interest representation rests on the belief that those actors for whom the outcome of a certain issue matters most will usually spend more resources on influencing the decision-making regarding the issue than other actors. As a consequence, so the assumption continues, issues will most often be decided in favour of those actors for whom they matter most.<sup>79</sup>

I believe that there are at least two ways in which the pluralist system of interest representation that has been predominant in the United States helps to explain why American firms in the Great Lakes watershed have balked at making (voluntary or legally required) investments in water protection. First, a pluralist system induces actors to think in individualistic, rather than social, terms. Investment in water protection undertaken by a firm benefits all humans and animals 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. The cost of the investment are internal to the firm, while the benefits are to a large degree external. Standard economic analysis (based on the assumption of self-interested behaviour) would predict under-investment. However, if actors thought more in group, or 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, in a pluralist system the organisational basis for voluntary industry-wide water protection programs is lacking. There is no central industry association that has enough authority to induce firms to invest in water protection programs.

The manner in which the governments of the Rhine countries have developed water and air protection policies is a long haul from the extensive concertation between public and private organisations that is characteristic of corporatism. By and large the governments of the Rhine states have used 'command-and-control' approaches to environmental protection.<sup>80</sup> They have attempted to force industries to invest in water and air protection by adopting legally enforceable 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

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<sup>78</sup> Schmitter 1979, 15.

<sup>79</sup> Cawson 1986, 27-32; Dahl 1956.

<sup>80</sup> For Switzerland see Knoepfel 1997, 180; for Germany see Jänicke and Weidner 1997, 139; for the Netherlands, Bressers and Plettenburg 1997, 115-16; for France see Müller-Brandeck-Bocquet 1996, 37-38.

required standards. On top of this, Rhine firms have been charged water pollution fees. During the interviews, the representatives of Rhine companies often argued that in their eyes the authorities had not been overly responsive to the views and wishes of their companies. Government officials meanwhile often claimed that according to them legally enforceable standards as well as controls of firm behaviour are necessary policy instruments. So it is of the utmost importance to stress that the politics of water protection within the Rhine countries have only been 'consensual' in comparison to the extremely adversarial water protection politics in the United States.

In the United States, EPA has also opted for a strict regulatory policy approach.<sup>81</sup> But not every command-and-control policy equals the other. Some command-and-control policies involve more commanding and controlling than others. Clearly, EPA's approach to water and air protection has been much more rigid, top-down and legalistic than the water and air policies of ministries in the Rhine countries.<sup>82</sup> The views of industry have carried less weight in EPA's decision-making process concerning regulations and standards than has been the case in the Rhine valley. American emission values and technological standards have been far more detailed and strict than European ones. In the Rhine countries, firms who had not been able to fulfil their legal obligations towards the environment have sometimes been able to report this freely to the authorities, and discuss the problem. Government officials from these countries have certainly not threatened firms with severe penalties. In similar cases in the United States, EPA has shown little understanding. Instead, it has frequently handed out heavy fines to firms and sometimes even sought imprisonment for business executives who have not met environmental standards.<sup>83</sup>

Another factor has also made the command-and-control policies of the Rhine countries less oppressive than the command-and-control policies of EPA. In two Rhine countries the governments have ceased favouring a command-and-control approach to water protection. From the mid-1980s onwards, the Swiss and Dutch governments started to put more and more emphasis on voluntary programs.<sup>84</sup>

A last development that has softened the impact of the command-and-control policies in the Rhine countries (but not in the United States) 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 central policy-makers in both countries have preferred strict and direct regulation of polluters. They have formulated national norms to be implemented in stringent protection

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<sup>81</sup> Andrews 1997, 28-29. For EPA's handling of Great Lakes firms this argument is made in Allardice, Mattoon and Testa 1994, 357-58.

<sup>82</sup> Brickman, Jasanoff and Ilgen 1985, 75.

<sup>83</sup> Also 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>84</sup> Bressers and Plettenburg 1997, 116; Knoepfel 1997, 181.

policies. But the *policy-implementers* in both France and the Netherlands have often diverged from these strict controls.<sup>85</sup>

In general, command-and-control policies are much resented by firms. The strict regulatory approach chosen by EPA has therefore contributed significantly to the distrust and disagreements that characterise American environmental politics.

### **The executive and environmental organisations**

The room for influence that environmental groups have had in the Rhine valley has differed from country to country.<sup>86</sup> In Switzerland, environmental groups have had the greatest opportunities for effecting policy change, in France the least. Whatever the precise differences between the Rhine countries, the opportunities that environmental groups have had in Western Europe have been dwarfed by those in the United States. Besides the challenges that environmental groups can launch through the courts, Congress and the White House, EPA has offered environmental groups ample opportunities to directly affect its policies. Formally, EPA is obliged to invite citizens' groups to comment on proposed legislation. Informally, it has often favoured the viewpoints of environmental organisations over those of corporations.

Strangely enough, even these arrangements have given rise to acrimony between EPA and environmental organisations. This has been the case at times when the EPA has not been able to enforce strict environmental standards adopted under pressure of environmental groups. For instance, during the 1987 international negotiations on the protection of the Great Lakes, EPA allowed three environmental groups to play an influential role. Their influence contributed to the adoption of a quite ambitious international document, the 1987 Amendments to the Great Lakes Water Quality Agreement. Ever since, environmental organisations have been blaming EPA for the slow implementation of this international agreement.<sup>87</sup> Unsurprisingly, the business community has felt 'exposed' by the direct influence environmental organisations have sometimes been able to exert on EPA, and has sought to fight back - in the courts, the White House and Congress.<sup>88</sup> In the Rhine countries, government officials have tended to be less impressed with the arguments of environmental groups, and have tended to be more 'neutral' - thus easing the qualms of corporations.

In sum, the formal and informal institutions that have regulated the extensive, direct contacts between EPA and American environmental organisations have been an additional source of the distrust and disagreement that has plagued America's environmental politics -

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<sup>85</sup> Bressers and Plettenburg 1997, 116; Müller-Brandeck-Bocquet 1996, 62 and 73-87.

<sup>86</sup> Kriesi, Koopmans, Duyvendak and Giugni 1992.

<sup>87</sup> See Great Lakes United 1991.

<sup>88</sup> Vogel 1996, 319.

next to the institutions that regulate the relations between the executive, the judiciary, the legislature, and the business community.

### **The importance of particular institutions; or, the enigma that is Switzerland**

The institutional argument I have offered consists of two parts. The first speaks of the impact of American exceptionalism on U.S. environmental politics (as compared to the environmental politics in the Rhine states). The second part zooms in on the specific institutions that have shaped the relations between the executive, legislature, judiciary, firms and environmental groups in both the Rhine valley and the United States. These two parts are clearly interrelated: the Americans' passion to muzzle hierarchy is reflected in the ways in which the executive, the legislature, the courts, corporations and citizens' groups interact.

So why have I bothered to mention these specific institutions? The short answer to that question is: Switzerland. A longer version of the response runs as follows. A desire to limit hierarchy does not automatically need to lead to American-style, adversarial institutions. A desire to limit hierarchy is compatible with various sets of institutions regarding the ways in which public and private actors relate. In fact, a desire to limit hierarchy can even support more consensual, as opposed to adversarial, institutions, including those institutions that impinge on environmental politics. The case of Switzerland shows this.

Swiss society has resembled the United States in many ways. The Swiss people have resisted and opposed central authority as least as intensely as have U.S. citizens. This is apparent in many ways. *Vis-à-vis* private actors (and especially the business community), the Swiss state has been weak.<sup>89</sup> In addition, as in the United States, the Swiss government has not had much direct involvement in the economy. Switzerland has resisted the build-up of a publicly funded welfare state. The citizens of the United States and Switzerland have enjoyed higher real incomes than people from almost all other countries in the industrialised world.<sup>90</sup> Compared to other industrialised countries, the tax rates in Switzerland and the United States have been low.<sup>91</sup> Admittedly, the Swiss business community is more centralised than the American one. Yet, both the Swiss and U.S. business community have been staunch defenders of economic liberalism and a weak state.<sup>92</sup> In fact, Switzerland sometimes seems more 'American' than America. For instance, its central bank is still in private hands. The Swiss also use the weapons of direct democracy (such as the referendum) more often than in the United States. In sum, it makes as much sense to speak of a 'Swiss exceptionalism' as to talk of an American exceptionalism. The Swiss have resisted the creation of a strong central state as much as U.S. citizens have.

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<sup>89</sup> Kriesi 1996, 540.

<sup>90</sup> Rose 1991, 208; Katzenstein 1984, 84.

<sup>91</sup> Katzenstein 1984, 110.

<sup>92</sup> For the Swiss case, see Katzenstein 1984, 113. For the U.S. case, see Vogel 1996, 48.



Given this, it is instructive to compare the polities of the United States and Switzerland. Despite a common aversion to central government in both Switzerland and the United States, political processes and relations in the former have been distinctly more consensual than in the latter. This shows that the anti-hierarchical values embodied in the American Creed do not necessarily lead to conflictual political processes. Political systems that are based on a desire to limit government probably have a tendency to become adversarial. But the specific, historic institutions of such political systems can either overcome that tendency or (as in the United States) strengthen it.

So which specific institutions have made the Swiss polity more consensual? First, although the Swiss constitution of 1874 is to a large degree a copy of the U.S. Constitution and therefore relies on a strict separation of powers, this separation of powers has been less pronounced in Switzerland than in the United States.<sup>93</sup> Swiss courts have not meddled with governmental policies and parliamentary acts to the extent that U.S. courts have. In addition, the Swiss government (the Federal Council) is appointed by the parliament, and not elected separately by the public, as in the United States. Second, several authors have argued that the frequent (threat of the) use of referenda and popular initiatives in Switzerland have been conducive to cooperation. A last argument points to the history of the Swiss nation. The Swiss cantons have been more or less democratic since the 13th century. For the majority of this time, they remained a tiny island of democracy in a vast sea of authoritarian regimes, led by power-crazy kings, princes and popes. In order to preserve their democratic institutions in this hostile environment, the Swiss could not but cooperate.<sup>94</sup>

### **The rise and stumble of the International Joint Commission**

The last part of my argument is more intentional than institutional. It has to do with the ways in which one important actor in the international regime for the protection of the Great Lakes, the International Joint Commission, has operated. I have tried to show how numerous American institutions have contributed to the development of a system of environmental politics in which actors pay little heed to rationales other than their own, and constantly fight to get their views implemented. But institutions only *induce* actors to think and act in certain ways. They do not bind and gag them. It is possible for actors to decide to go 'against the grain', especially if they are aware of other institutional contexts. Unfortunately, the International Joint Commission has not done so. Its behaviour has only served to strengthen the 'push-and-shove' system of U.S. environmental politics.

In a number of ways the IJC has further stoked the fires of Great Lakes environmental politics. 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

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<sup>93</sup> Blankart 1993, 84.

<sup>94</sup> Elazar 1993.

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 organises a Biennial Meeting at which stakeholders can present their views on the protection of the Great Lakes to the Commission. Usually, thousands of representatives from non-governmental organisations attend these meetings. The opinions of persons attending these conferences often find their way into the Biennial Reports. Sometimes, the IJC also invites non-governmental actors to serve on its advisory boards. The IJC is very proud of its extensive public participation processes. They are indeed unique in the world. However, this public participation has seldom consisted of input by corporate leaders. Representatives from firms only started to come to the Biennial Meetings from the beginning of the 1990s onwards. At both the 1991 conference and the 1993 conference, they were shouted down by a hostile crowd of environmentalists - an experience they did not particularly relish. Business representatives have also seldom served on the advisory boards of the IJC.

A second way in which the IJC has polarised the Great Lakes regime is through its recommendations to the North American governments. The 1978 Great Lakes Water Quality Agreement includes the goal to 'virtually eliminate' industrial and municipal emissions of persistent toxic substances. A whole political battle has been waged over the interpretation of the concept of 'virtual elimination'. Environmental groups have advocated a strict interpretation of this concept. Their battlecry has been 'zero means zero'. Great Lakes firms have rallied against such a narrow interpretation. They have contended that such a strict interpretation would not only threaten their businesses, but would also not be a cost-efficient form of protecting the Great Lakes. In their eyes, greater ecological gains are to be had by investments elsewhere. Typically, 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 fate 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.<sup>95</sup> This recommendation by the IJC 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 organisations with the sole task of blocking the acceptance of this one IJC recommendation by the national governments: the Chlorine Chemistry Council in Washington, DC, and the Canadian Chlorine Coordinating Committee in Ottawa. These organisations have had a rather powerful argument: chlorine is an element from the periodic table. An unsympathetic reading of the recommendation by the IJC is therefore that the international organisation 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 the latter powerful ammunition to claim that the IJC is not neutral and bases its proposals on 'bad science'. In fact, the chlorine recommendation of

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<sup>95</sup> International Joint Commission, 1992, 57.

1992 sparked a debate among Great Lakes firms to lobby for the abolishment of this (by now) 90-years-old, official international organisation.

In reaction to the 'chlorine controversies' created by the IJC, Environment Canada and EPA decided to sideline the International Joint Commission somewhat - at least for the time being. Since 1994 progress under the Great Lakes Water Quality Agreement has been discussed at the State of the Lakes Environmental Conferences (SOLECs) under the auspices of the Binational Executive Committee. Firms have been included in this process from the outset, and feel that their arguments have received a much fairer hearing at the SOLECs than at the IJC conferences.

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) probably beneficial for the environment too. However, the IJC actions have at the same time deepened the rifts that already existed between the actors in the Great Lakes regime. Thus IJC has greatly reinforced the adversarial system of water protection in the (United States side of) the Great Lakes area. This has not been inevitable, as precisely the IJC has had first-hand experience with a more consensual way of protecting the environment, namely through their experiences with Canadian water politics. So, the IJC has missed a chance to bring firms, environmental groups and government departments closer together. In my view, this has also been harmful to the environmental protection of the Great Lakes, as ultimately the adversarial relations that have existed between Great Lakes firms, environmental organisations and EPA have been the main cause of the (relative) lack of willingness among Great Lakes corporations to invest in water protection.

## **Summary and conclusions**

The puzzle of this article has been: how has it been possible that the waste water discharges from U.S. firms into the Great Lakes have remained more toxic than the emissions of firms located at the borders of the Rhine, despite the existence of many factors that would have led one to expect the opposite? The initial answer to this question has been: because the firms in the Rhine catchment area have made extensive voluntary investments in water protection, while the U.S. firms in the Great Lakes watershed have not only refrained from making extensive voluntary investments in water protection, but have also opposed legal requirements to take environmental measures. But this answers begs the question: why have companies behaved so differently? I have given a predominantly institutional answer, arguing that a variety of institutional differences between the Rhine valley and the Great Lakes basin have made it possible for organisations in the former area to cooperate and have obstructed such concertation in the latter region. Two sets of institutional differences are relevant. The first one consists of the anti-hierarchical norms and values that make up America's exceptionalism. These have lent themselves to an American appreciation of 'standing up for yourself', and 'not bowing to authority'. This must have made it easier for

corporate leaders in the Great Lakes region to reject governmental measures. Moreover, American exceptionalism also prevented the expansion of government in the early 1970s - a time when the U.S. government was asked to ensure strict environmental protection. The inevitable failures that resulted from this can only have increased the dislike and rejection of central government. Yet, as I argued on the basis of the case of consensual Switzerland, a widespread negation of hierarchy and central regulation does not necessarily lead to antagonistic politics. It only constitutes a force that push actors towards such politics. Other, possibly countervailing, forces exist as well. Such other forces are the historically specific institutions that regulate the relations between the executive, legislature, judiciary and private organisations. I have shown that the specific forms that these institutions have taken in the United States have differed from those in the Rhine countries in such ways as the make environmental politics in the former area much more adversarial than in the latter. And, still, this may not have been enough. Even combined, American exceptionalism and the historically specific forms of the links between public and private organisations in the United States may not have been fully sufficient for the creation of highly antagonistic relations in the Great Lakes watershed. Especially the old, once venerated International Joint Commission had an opportunity to bring minds together. However, the IJC chose to 'play hard', American-style, and thereby (until quite recently) quelled any opportunity for the evolvement of more consensual relations. A non-institutional factor also needs to be mentioned: in the Great Lakes states, firms have not paid a fee on discharges, contrary to their European brethren. Together, these four elements (American exceptionalism, the relations between public and private actors, the actions of the IJC, and the European pollution fee) form my explanation of why the Rhine is presently cleaner than the Great Lakes.

One issue remains: do more cooperative institutions lead to more comprehensive environmental protection than institutions that polarise? The issue seems clear-cut, judging by the evidence presented here. The more consensual politics of the Rhine countries have led to cleaner industrial effluents than the antagonistic policy processes in the Great Lakes watershed. Yet a number of reservations must be made. First, it needs to be remembered that I have only compared two environmental regimes, which does not allow for overly strong inferences. In addition, I have only focused on one circumscribed aspect of these two regimes, namely industrial discharges into water. I have not considered industrial discharges by air, efforts to reduce polluted sediments, agricultural emissions, or the restoration of habitat. I am not sure how including any of these factors would have affected my conclusions.

It also important to realise that my research has reached somewhat different conclusions than four other comparative studies of environmental politics on both sides of the Atlantic: those of Vogel (1986); Badaracco (1985); Wilson (1985); and Brickman, Jasanoff and Ilgen (1985). These studies compare various other aspects of environmental politics in the United States with regulation in European countries (including Britain, France and Germany). They reach quite similar conclusions concerning the 'independent variable' of this study, namely that America's political institutions give rise to much more adversarial environmental policy processes than European institutions. But they reach dissimilar conclusions regarding the

‘dependent variable’, *i.e.*, the level of environmental protection that has been achieved. They estimate that in their cases the environmental protection that was achieved in the United States roughly equalled that of European countries. So, in their cases, similar environmental results were reached via two contrasting ways: an adversarial path in America and a more consensual route in Europe (and Japan). This puts into doubt any easy conclusion that antagonistic institutions provide for less environmental protection than more consensual ones.

One possible explanation for the different results of my study and theirs is that I have had the opportunity to look at a longer time period. Their studies were published in the mid-1980s. I have been able to incorporate the ten years after 1986 as well. Environmental policy processes are usually played out over the long-term. Perhaps the full effects of institutions on environmental protection can only be discovered in the long run. If this reasoning had some truth to it, it would make my analysis somewhat more revealing. In this respect, it is significant that Richard Andrews has recently concluded that water pollution in the United States has probably grown slightly worse over time.<sup>96</sup>

Last, a main advantage of the American system needs to be acknowledged. The American system of environmental protection creates a lot of scientific knowledge and debate. American organisations constantly engage in scientific research, partly in an effort to show that their particular view of the environment is the right one. The fruits of this scientific research and debate are often used as guidelines for environmental protection policies in Europe.<sup>97</sup>

When empirical evidence is not sufficient, issues can also be tackled deductively. A rationale can be set up suggesting that consensual institutions benefit environmental protection more than divisive ones. Ecological issues are truly *cross-boundary*. These issues cross both territorial and scientific borders, and also cut across different segments of society, as usually both their causes and solutions lie in a variety of social processes. It can be argued that ecological issues are so complex that their resolution need the cooperation of all involved organisations. Each of these organisations has unique skills and knowledge. Firms have detailed knowledge of their cost structure, and are well-positioned to find efficient, practical solutions to environmental problems. Environmental groups are useful ‘watchdogs’. They tend to perceive ecological problems before other organisations do. Government agencies can be useful in scientifically assessing the claims made by environmental groups, as well as by acting as the ‘objective’, neutral arbitrator between the contradictory opinions of environmental groups and firms. They 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, as well as integrate and coordinate different environmental measures. Under institutions that do not pit these various organisations against each other, the positive contributions that all these organisations may have to offer to environmental protection are allowed to come out.

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<sup>96</sup> Andrews 1997, 27.

<sup>97</sup> Brickman, Jasanoff and Ilgen 1985, 309.

Under adversarial institutions, everyone is busy discrediting the claims of everyone else, thereby reducing the constructive contributions that each could make. This line of reasoning clearly favours more cooperative institutions for effective and efficient environmental protection. But the final verdict, of course, remains open.

## **Acknowledgements**

I gratefully acknowledge the help that I received in writing this essay from Marc Galanter, Adrienne Héritier, Christer Jönsson, Gerd Junne, André Nollkaemper, Dan Oakey, Graham Wilson and Jan Zielonka.

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## **Appendix**

Interviews with stakeholders in the environmental protection of the Rhine

(\* signifies an interview over the telephone)

*Governmental organisations:*

### The Netherlands:

Ministry of Transport, Public Works and Watermanagement, The Hague, 14 March 1996; and Haarlem, 4 April 1996.

Ministry of the Environment, The Hague, 14 March 1996.

Ministry of Foreign Affairs, The Hague, 25 March 1996; The Hague, 4 April 1996; and Amsterdam, 8 April 1996.

Ministry of Agriculture, Nature and Fishery, The Hague, 11 April 1996.

Port of Rotterdam, Rotterdam, 12 April 1996.

Dr Pieter Winsemius, former Minister of the Environment, presently director of McKinsey Consultancy Amsterdam, Amsterdam, 5 July 1996.

Institute for Inland Water Management and Wastewater Treatment (RIZA), Lelystad, 1 August 1996; and Lelystad, 24 January 1997.\*

Ms. Neelie Kroes, former Minister of Transport, Public Works and Watermanagement, Nijenrode, 20 August 1996.

Federal Republic of Germany:

Ministerium für Umwelt, Energie, Jugend, Familie und Gesundheit des Landes Hessen, Wiesbaden, 11 July 1996.

Ministerium für Umwelt des Landes Nordrhein-Westfalen, Düsseldorf, 23 July 1996.\*

Ministerium für Umwelt des Landes Rheinland-Pfalz, Mainz, 24 July 1996.

Bundesministerium für Umwelt, Bonn, 5 August 1996.

Ministerium für Umwelt und Verkehr des Landes Baden-Württemberg, Stuttgart, 11 November 1996.

Municipality of Bonn, Bonn, 11 March 1997.\*

Municipality of Mannheim, Mannheim, 7 April 1997 (written answers).

Municipality of Frankfurt, Frankfurt, 11 April 1997.\*

Luxembourg:

Administration de l'Environnement, Luxembourg, 12 July 1996.

France:

Agence de l'Eau Rhin-Meuse, Metz, 13 November 1996.

Ministère de l'Agriculture, de la Pêche et de l'Alimentation, Paris, 19 November 1996.

Ministère de l'Environnement, Paris, 19 November 1996.

Switzerland:

Bundesamt für Umwelt, Wald und Landschaft, Bern, 14 November 1996.

*International Organisations:*

European Commission, Directorate General 11, Brussels, 2 April 1996; and Brussels 3 April 1996.

European Parliament, Brussels, 2 April 1996.

International Commission for the Protection of the Rhine against Pollution (ICPR), Koblenz, 8 July 1996; Delft, 30 July 1996; Koblenz, 5 August 1996; and The Hague, 8 November 1996.

Central Commission for the Navigation of the Rhine, Strasbourg, 15 November 1996.

*Business:*

European Chemical Industry Council (CEFIC), Brussels, 3 March 1996.

Shell Pernis BV, Rotterdam, 18 March 1996.

Internationale Arbeitsgemeinschaft der Wasserwerke im Rheineinzugsgebiet (RIWA), Amsterdam, 5 April 1996.

Dr Pieter Winsemius, former Minister of the Environment, presently director of McKinsey Consultancy Amsterdam, Amsterdam, 5 July 1996.

Verband der Chemischen Industrie (VCI), Frankfurt, 10 July 1996.

Hoechst AG, Frankfurt, 11 July 1996.

BASF AG, Ludwigshaven, 24 July 1996.

Bayer AG, Leverkusen, 1 August 1996.\*

Mines de Potasse d'Alsace, Mulhouse, 12 November 1996.

Sandoz Pharma AG, Basel 14 November 1996.

Ciba-Geigy AG, Basel, 14 November 1996.

*Agriculture:*

Landbouwschap, The Hague, 25 March 1996.

Deutscher Bauernverband, Bonn, 10 November 1996.

Federation Nationale des Syndicats d'Exploitants Agricoles, Paris, 17 March 1997.\*

*Environmental organisations:*

Stichting Reinwater, Amsterdam 20 March 1996; Amsterdam, 26 March 1996\*; and Amsterdam, 12 April 1996.

World Wide Fund for Nature Germany, Rastatt, 11 July 1996.

Naturschutzbund Deutschland, Kranenburg, 12 July 1996.

Bundesverband Bürgerinitiativen Umweltschutz, Freiburg, 11 November 1996.

Bund für Naturschutz Baselland, Basel, 15 November 1996.

Total number of interviews: 54.

Total number of interviewees: 58.

## **Interviews with Stakeholders in the Environmental Protection of the Great Lakes**

(\* signifies an interview over the telephone)

*Governmental and tribal organisations:*

### United States

New York Department of Environmental Conservation, Albany, New York, 27 May 1997.\*

Department of Agriculture, Natural Resources Conservation Service, Madison, Wisconsin, 29 May 1997.

Great Lakes Environmental Research Laboratory, Department of Commerce, Ann Arbor, Michigan, 3 June 1997.

Great Lakes Commission, Ann Arbor, Michigan, 6 June 1997.

Environmental Protection Agency, Great Lakes Regional Office, Chicago, Illinois, 6 June 1997.

Federal Reserve Bank of Chicago, Chicago, Illinois, 20 June 1997.

Environmental Protection Agency, Washington DC, 23 June 1997.

Wisconsin Department of Natural Resources, Madison, Wisconsin, 7 July 1997.

Army Corps of Engineers, Chicago, Illinois, 7 July 1997.\*

Fish and Wildlife Service, East Lansing, Michigan, 8 July 1997.\*

State Department, Washington DC, 9 July 1997.\*

Michigan Department of Natural Resources, Great Lakes Office, East Lansing, Michigan, 15 July 1997.\*

Environmental Protection Agency, Washington DC, 16 July 1997.\*

Great Lakes Indian Fish and Wildlife Commission, Adena, Wisconsin, 17 July 1997.\*

Council of Great Lakes Governors, Chicago, Illinois, 25 July 1997.

## Canada

Ministère de l'Environnement et de la Faune, Gouvernement du Québec, Québec, Québec, 28 May 1997.\*

Agriculture Canada, Guelph, Ontario, 11 June 1997.

Ontario Minister of Environment and Energy, Guelph, Ontario, 11 June 1997.

Environment Canada, Downsview, Ontario, 12 June 1997.

Ontario Ministry of Environment and Energy, Toronto, Ontario, 24 July 1997\*

Canadian Center for Pollution Prevention, Industry Canada, Sarnia, Ontario, 10 July 1997.\*

### *International organisations:*

Great Lakes Fishery Commission, Ann Arbor, Michigan, 3 June 1997.

International Joint Commission, Great Lakes regional office, Windsor, Ontario, 5 June 1997.

International Joint Commission, U.S. section, Washington DC, 24 June 1997.

International Joint Commission, Canadian section, Ottawa, 17 July 1997.\*

### *Business:*

Council of Great Lakes Industries, Ann Arbor, Michigan, 4 June 1997.

Chemical Manufacturers Association, Arlington, Virginia, 24 June 1997.

Chlorine Chemistry Council, Arlington, Virginia, 24 June 1997.

American Forest and Paper Association, Washington DC, 25 June 1997.

LTV Steel, Cleveland, Ohio, 8 July 1997.\*

Canadian Chlorine Coordinating Committee, Ottawa, 17 July 1997.\*

Inland Steel, East Chicago, Indiana, 18 July 1997.\*

Xerox Company, Buffalo, New York, 21 July 1997.\*

Wisconsin Manufacturers and Commerce, Madison, Wisconsin, 21 July 1997.

Ford Motor Company, Dearborn, Michigan, 30 July 1997.\*

Eastman Kodak Company, Rochester, New York, 4 August 1997.\*

Great Lakes Water Quality Coalition, Chicago, Illinois, 4 August 1997.\*

Canadian Vehicle Manufacturers' Association, Toronto, 5 August 1997.\*

*Environmental organisations*

Nature Conservancy, Chicago, Illinois, 2 June 1997.

National Wildlife Federation, Ann Arbor, Michigan, 4 June 1997.

Pollution Probe, Toronto, Ontario, 13 June 1997.

Sierra Club - Great Lakes Office, North Henry Street, Madison, Wisconsin, 19 June 1997.

Greenpeace, Great Lakes Office, Chicago, Illinois, 20 June 1997.

Environmental Defense Fund, Washington DC, 27 June 1997.

Great Lakes United, Buffalo, New York, 9 July 1997.\*

Great Lakes Tomorrow, Toronto, Ontario, 10 July 1997.\*

Canadian Institute for Environmental Law and Policy (CIELAP), Toronto, Ontario, 14 July 1997.\*

Total number of interviews: 47.

Total number of interviewees: 51.