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Canada-United States Relations in the Environmental Field

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Abstract: With the globalization of environmental issues, the impact of environmental pollution on people's lives has become increasingly important. Environmental issues have become increasingly urgent for governments and people in Canada and the United States, primarily due to the growing popularity of industrialization and urbanization. With the longest Canada-U.S. border in the world, the two countries' environmental relationship will directly impact environmental issues on both sides of the border. In terms of environmental policies and diplomatic relations, both countries played an excellent role as the first group of developed countries to emerge from the environmental movement. Based on many scholars' explorations and perspectives on the environmental relationship between Canada and the United States. This article will focus on the environmental policies of the two countries in the mid-to-late 20th century, exploring cross-governmental interactions as well as cross-border scientific and technological collaboration in the context of environmental policies from both countries. Meanwhile, the United States, the most powerful country of the period, has been a role model and an object of imitation in the environmental field for Canada and other countries. However, as the closest neighborhood, the United States has influenced Canada's environmental development positively and negatively, either directly or indirectly.

Keywords: Canada-US relations, international politics, environmental policy

1. Introduction

Throughout the second half of the 20th century, environmental issues became increasingly important to the international community. Due to the rapid economic development of developed countries during the first half of the twentieth century, the living environment deteriorated, leading to a series of harmful consequences. In the face of severe environmental problems, environmental thinking began to emerge first in these developed countries, with the United States as the leader of the environmental movement and Canada following in the footsteps of the United States. As long-standing neighbors, Canada and the United States have long had close ties in politics, economics, culture and diplomacy. Thus, the United States has often played a vital and active role in this relationship. Moreover, the interconnectedness of the two countries' geographic locations has led to complex and multifaceted environmental relations between the two countries.

Moreover, although Canada-U.S. relations have been a significant area of study for many scholars, there have been more results regarding Canadian and American policy studies. However, the 1960s and 1970s are critical periods in studying Canadian and U.S. environmental policy and history that are difficult to bypass. Scholars have paid insufficient attention to the place this period occupies in

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the history of Canadian and U.S. environmental policy and its influence on subsequent generations. The study of environmental policy in this period can thus be strengthened in the future by later scholars.

2. Canada and the United States Have an Interoperability Relationship in Promoting Each Other's Environmental Development in Multiple Ways

In the environmental relationship between Canada and the United States, there is direct interoperability in implementing policies and promoting environmental development. Due to their respective political positions and contextual factors, there have been significant differences and frictions in domestic and international policy priorities in recent years, but this has not significantly impacted the environmental relationship between the two countries. This is because the environmental relationship between the two countries has been driven primarily by addressing pressing cross-jurisdictional pollution issues, shared resource management and allocation, and other issues [1].

Meanwhile, in the 1970s and 1990s, Canada and the United States focused primarily on the direction federal officials in both countries were taking to coordinate their national and cross-border political dynamics, working to further bilateral goals. Both Canada and the United States realized in the 1960s that their respective ecological environments were depleted of resources and polluted due to rapid industrialization and urbanization [2]. For example, the Great Lakes region served as the central region of the industrial economies of both countries. Despite its proximity to industrial centers like automobiles and steel, the lakes region has benefited substantially from booming industrialization. Conversely, the Great Lakes basin is diverse in species and rich in natural resources. The development of heavy industry in both countries has resulted in the discharge of large amounts of industrial wastewater and exhaust gases. The Great Lakes and local air have been seriously polluted, significantly affecting and damaging the water quality and the original ecological system of the Great Lakes [3]. Amidst an urgent environmental situation, the two sides share the same consensus on environmental protection at the sub-national and transboundary regional levels in the face of cross-jurisdictional protection, thus strengthening cross-governmental interactions between the two borders [1].

2.1. Cross-governmental Interaction Exists Between Canada and the United States in the Environmental Field

Accordingly, there are effective working relationships between mid-level officials in both countries. There are different patterns of cross-border interaction between the two countries, including formal working relationships between senior officials and less visible but effective working relationships between mid-level officials, experts, and NGOs [1, 4]. For instance, air pollution is one of the areas where local governments and mid-level officials from both countries along the border have intensified. Each country's officials interact through various meetings, discussions, and cooperation to solve existing and future environmental problems and plan for environmental resources [5]. To this end, the two countries signed numerous environmental protection agreements in the 1970s and 1990s. Each of these agreements has strengthened communication and bilateral cooperation. Furthermore, Canada and the United States have better understood each other's political and regulatory systems through close cooperation. The result has been the establishment of many cooperative organizations and agencies that interact effectively and have been instrumental in the progress of most issues.

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2.2. The Consolidation of Cross-border Scientific and Technical Relations Between Canada and the United States Was Achieved Through Cooperation in the Environmental Field

During the 1970s and 1990s, both countries signed and implemented many environmental protection agreements; a network of professional interactions between government officials and NGO experts in the early 20th century led to a consolidation of cross-border science and technology relationships in the environmental field. Government officials and non-governmental experts formed a cognitive community. Science and technology relations, as well as environmental relations, can be positively influenced and benefited by the formation of the cognitive community.

First, governments and non-governmental organizations in the environmental field have improved trust and cooperation between officials through communications, data sharing, and technical cooperation. It helps both sides to reach a consensus on the scientific status of specific environmental issues so that both sides can propose effective policies on their respective environmental status and future demands [4, 6]. Through the meeting, both sides assess the implementation ability of policies, providing both governments with diverse options for environmental policies. At the same time, it helps both governments reach a consensus on their policy goals by understanding the status of existing environmental issues and identifying consensus on mutually agreed goals for the future, thus promoting the implementation actions of both sides' policies.

Second, with repeated collaborations, cross-governmental ties have grown closer, leading to increased scientific and technical convergence and cross-border regional interaction at the national and local government levels, resulting in closer and inseparable environmental relationships between the United States and Canada. The growing interoperability between Canada and the United States has facilitated the depoliticization of the environment. At the same time, because of the failure of federal policy implementation in the environmental field, local governments on both sides have taken on more responsibility for environmental issues across borders. Neither federal government has the actual power to control cross-border interactions and policy decisions between local governments on either side [1]. Therefore, whenever there is a political disagreement between the two sides at the national level, it has no mainstream impact on the policy implementation of local governments in the border area and cross-border interactions between the two sides.

Overall, reaching a consensus through the scientific field helps to improve or even avoid controversies arising from different interpretations of existing science and contributes to the academic development of the environmental field on both sides. Currently, the scientific organizations in the field of environmental expertise in Canada and the U.S. already have significant international influence.

3. Implications and Obstacles to Environmental Relations Between the Two Countries on the Path to Interoperability in the Environmental Field

The two countries have helped to achieve cross-border interoperability in the environmental field by strengthening cross-governmental relations, enhancing mid-level official relations, and consolidating cross-border scientific and technological cooperation. In addition, the achievements of interoperability in the environmental field have impacted both countries, mainly in the form of increasingly cordial multi-disciplinary communication and cooperation between the two countries, as well as a change in political patterns.

3.1. Implications for Canada and the United States Through Achieving Cross-border Interoperability in the Environmental Field

First, the communication channels for environmental interoperability between the two countries have become more affluent. Both sides have established open communication channels for data sharing in

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the environmental field, established many scientific and technical collaborations, and officials from both countries have gained more trust and interaction due to their cooperation. As well as developing realistic goals, they have devised implementation plans to solve the problems in question. Further, the interoperability of the environment and the fact that the two countries share it have made them less politicized. Since the two countries have had longstanding cooperation, environmental issues have remained out of politics.

Several agreements of cooperation and implementation have been made between the two sides in the field of environmental expertise, creating a significant international dimension in scientific careers in this field [1]. The bilateral political dynamic has been dynamic, and several bilateral institutions have been established.

The most famous of these is the formation of the North American Research Strategy on Tropospheric Ozone (NARUTO). NARUTO was created in the mid-1990s to improve air quality management in North America. It helped create a multi-stakeholder and multi-jurisdictional framework. It includes Canadian, U.S., and Mexican governments, regulatory agencies, environmental industry players, and non-governmental organizations that interact with scientists by using this framework [4, 7]. Meanwhile, NARUTO develops research on how air pollutants enter and exit North America. The nature, extent, and importance of pollutant transport pathways within North America, thereby helping the three governments develop and evaluate political strategies. NARUTO identifies the most influential scientific investigation strategies. As a result, scientists can coordinate information exchange and collaborate with tripartite policymakers on national and international levels by establishing and maintaining effective communication channels with policy, environmental control technologies, and ecological impact communities.

Although the NARUTO organization was dissolved on December 31, 2010, there is no denying that NARSTO has been a vital force in environmental policy development. Nevertheless, there is no doubt that NARSTO's work contributed to the creation of a scientific consensus between the three nations on how to reduce ground-level ozone and the formulation of effective policies between the Triad countries. Second, its organization's research activities and the permanent archive of its quality management resources are still available to the scientific community and have contributed to the international interaction and development of environmental science. Third, the formation of NARUTO is an extension of the transboundary cognitive community. At the national level, a new tripartite relationship has taken shape, providing a model of meaningful interaction and cooperation for cooperation in the environmental field in other countries.

3.2. Possible Roadblocks to Interoperability in the Environmental Field for Canada and the United States

Nonetheless, some barriers prevent environmental interoperability between the two countries. Political factors on both sides, at the national and international levels, will also affect environmental interoperability between Canada and the United States.

Among other things, political elections in each country have different leaders and political parties supporting different environmental policy philosophies at different times. This will directly lead to the government's attitude toward environmental issues [8]. In parallel, the environmental policies proposed by political parties will also directly influence the country's future financial investment in solving problems in the environmental field. Canada’s high dependence on the United States in financial investment makes its environmental policies and interoperability inevitably influenced by the United States to some extent [1, 4].

Simultaneously, the most severe issue critical to the interoperability of the two countries in the environmental field and the most severe problem in their environmental relationship is the allocation of resources and the attribution of responsibilities due to the limited shared resources, for example,

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in the face of water quality problems in the Great Lakes [9]. Also, the U.S. and Canadian governments must successfully resolve conflicts regarding allocating authority and responsibility for pollution problems and specific methods for treating pollutants.

4. In the Presence of U.S. Pressure, Canada is at a Disadvantage and Forced to Accept a Solution to the Environmental Conflict Between the Two Countries

The environmental relationship between Canada and the United States has not been equal in many cases. Canadian environmental policy has often been vulnerable to U.S. influence, forcing the abandonment of policies and implementation processes that might have helped solve the country's environmental crisis. On the one hand, Canada's environment is vulnerable to deterioration from the industrialization of the United States as a neighboring country. On the other hand, while the United States has made unequal offers and threats to resolve environmental conflicts, the Canadian government has been unable to react strongly.

A typical example is the bilateral acid rain pollution problem between Canada and the United States. There are many coal-fired power plants and industrial and mining companies in the two countries. To prevent too many pollutants from landing in the immediate area, U.S. companies erected tall smokestacks and placed exhaust gases at high levels to dilute and diffuse them [10]. However, this action reduced air pollution near the plants but did not reduce the number of harmful substances emitted into the atmosphere. Pollutants drift across Canada with the wind at high altitudes. These gases, which contain sulfuric acid, nitric acid and nitrogen oxides, are cooled by water vapor at high altitudes, forming acid rain that harms Canadian land. Canada has asked the United States to adopt strict control measures. However, the U.S. consideration of the small impact of the pollutants on its own country, the highest high input required to treat them, and the future development of the industrial sector led the U.S. government to dismiss its responsibilities. Because of the ecological interdependence of the two countries, the U.S. actions harm the Canadian environment. Nevertheless, in the face of U.S. intransigence, Canada is virtually powerless to stop the United States because it cannot do so.

5. The United States Has Been a Role Model for Canada in the Environmental Field

In addition, the United States influences Canadian environmental policy through knowledge export. Specifically, Canada has modelled its policies after those of the United States. Canada has recognized and borrowed from U.S. environmental policy innovations due to its belief that U.S. policy innovations apply to its national context [11]. The United States influenced Canada or Canada to follow the example of the United States because the two countries shared a high degree of similarity in values.

In the late 1960s and early 1970s, Canada and the United States placed environmental protection high on their political agendas. The United States, with its larger population and more developed industrial activities, also faced more serious environmental threats. At the same time, a trend of public and media coverage of environmental issues began to emerge in the United States [12]. Woodrow believes Canada's increasing attention to environmental issues is partly due to the "demonstration effect" of the United States' earlier focus on environmental issues. As Canada seeks to improve its environmental situation, the natural trend is for U.S. standards and environmental measures to serve as a benchmark for the Canadian government.

According to the public policy analysis of Canadian environmental policy, Canada is more vulnerable to changes in government attitudes toward environmental issues due to economic and public intentions than the United States [13]. For example, the late 1960s saw a surge in public interest in the environment. As a result, federal politicians, who had long considered pollution control a

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provincial responsibility, began to take a greater interest in environmental issues. The result was that the federal government passed nine environmental statutes during this period and created a Ministry of the Environment to administer them. After the 1970s, as the importance of environmental issues declined, so did the level of federal involvement [14].

The government of Canada often takes a "mix of concern and resignation" approach when faced with the choice between environmental protection and genuine economic and social issues [13]. The Canadian government is still concerned about environmental issues during this period. However, at difficult times when decisions need to be made, it prefers to protect the jobs of its citizens and resolve other critical political issues and conflicts. At the same time, Canada and the United States will always be hampered by other economic and political goals in the real world when faced with government solutions to environmental problems. Due to the limited nature of state funds and resources, the investment and talent required for environmental protection will be obtained at the expense of other goals of society. Accordingly, government support for environmental protection will rise or fall in response to the economy's performance and public intentions. Moreover, the Canadian government's approach to environmental issues has directly contributed to the gradual relegation of environmental issues to a secondary role.

In a 1970 Canadian Polling Institute poll on the severity of pollution, they probed and analyzed public attitudes to show that public concern about the environment in Canada is generally not sustained for long. While environmental issues undoubtedly stir up relatively high levels of concern among public opinion, they often rank relatively low in the rankings of various social issues. The survey shows that the public possesses a very high awareness of pollution issues, with at least 91% of all respondents expressing familiarity with the issue. Of these, 63% consider pollution to be a very important problem [15]. Although public awareness remained high and increased over time, this trend declined slowly throughout the 1970s and early 1980s and did not begin to rebound until the late 1980s. This trend can be reflected in Figure 1.

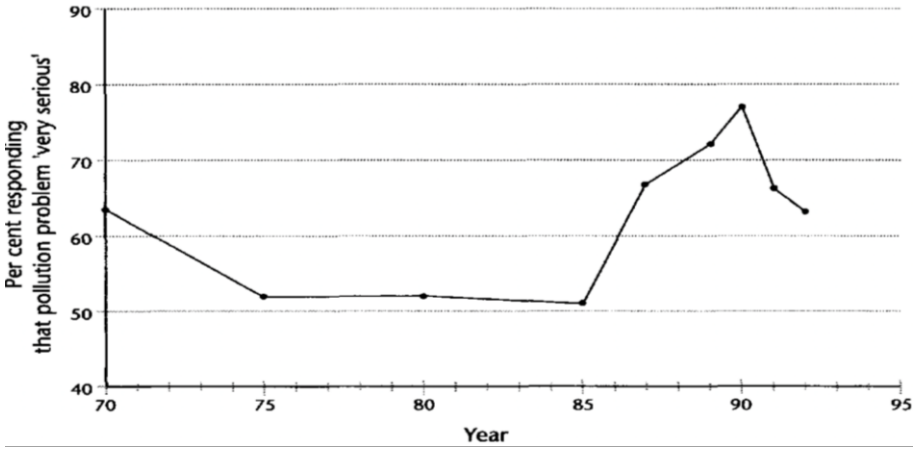


Figure 1: Canada’s trends in public concern for the environment [15].

Second, while public concern about the environment was high in Canada from 1972 to 1976, pollution was generally downward in ranking among Canada's most important issues. This trend is reflected in Figure 2 below. According to the survey, respondents were more concerned with inflation, unemployment, government spending and crime during these years than with the environment. This confirms that in the mid-1970s, despite the deep potential public concern about the environment, environmental issues were not a "top priority" for most Canadians. Unfortunately, evidence of public concerns about environmental quality in the early 1970s is scarce. Public awareness and concern

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about the environment in the United States declined significantly during this period, and, as in Canada, pollution issues in the United States rose and fell rapidly around 1970.

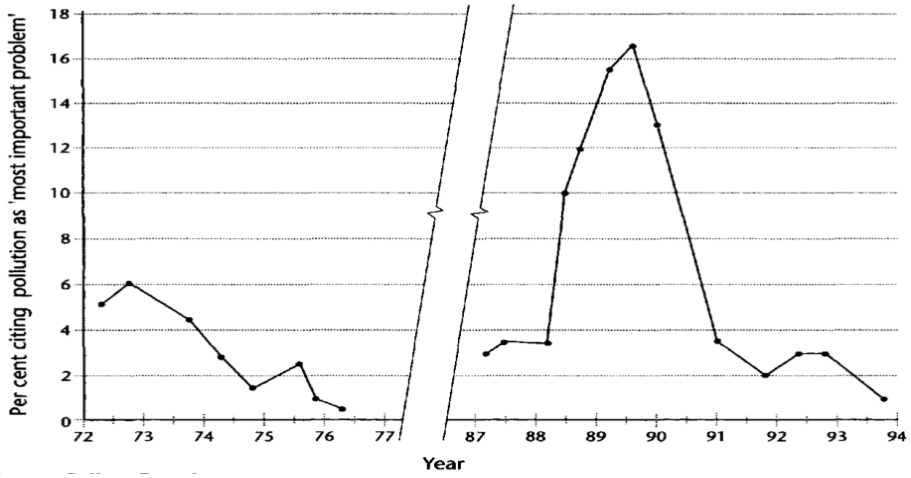


Figure 2: Canada's trends in the salience of the environment issues [16].

All in all, Canada and the United States have broadly similar trends in public concern about environmental issues. Along with this, the federal government's treatment of pollution issues has declined in importance on the government's agenda as public concern has gradually declined, reflecting the sudden nature of environmental problems. Because of society's wide range of problems, the government cannot intervene on all issues. Public concern about the environment is often relatively constant, while the highest priorities are relatively uncertain. As a result, Canadian politicians face direct political pressure to focus on society's most salient and pressing issues, in addition to voting elections, which reflect public opinion. The latter often becomes the essential factor for politicians to consider. This is the reason that Canadian government's policy stance in the face of environmental issues is often erratic.

6. Conclusion

This paper explores the relationship between the two countries in the environmental field more comprehensively, analyzing three aspects in detail. Primarily, the two countries have helped achieve cross-border interoperability in the environmental field by strengthening cross-governmental and mid-level official relations and consolidating cross-border scientific and technological cooperation. A second influence on interoperability has been the depoliticization of environmental relations between the two countries and bilateral and even variable forms of cooperation; political factors also hamper interoperability at the national and international levels of bilateral development. Lastly, the United States' strong position has negatively impacted Canada's environmental development and has raised the issue of conflicting social interests between the two countries. Nevertheless, as a role model in the environmental field in Canada's mind, the U.S. has been a significant influence on public attention to environmental issues and policy development.

Environmental science developed rapidly in Canada and the United States during the 20th century. With the interoperability and cooperation between the two countries in the environmental field, the U.S. has been able to keep the two countries in line by becoming a role model for Canada in environmental policy and leading Canada to follow the U.S. by developing strong environmental science research capabilities and media influence. At the same time, the U.S. and Canada are adept at limited bilateral cooperation in dealing with bilateral environmental relations, bridging domestic management goals with the requirements of international agreements in a flexible manner to avoid

excessive external intervention while ensuring the effectiveness of cooperation. Moreover, there is considerable value in using such a model of cooperation as a guideline for other developing countries with many neighbors, polluters, and a substantial number of environmental disputes.

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