

Constructivism on Transboundary Cooperation of Rhine River Basin

Jiaqi Chen^{1, †}, Yueying Guo^{2, †}, Mingyang Li^{3, *, †}

¹ Jilin University, China

² The University of Sydney, Australia

³ Wardlaw-Hartridge School, United State

*Corresponding author. Email: guanghua.ren@gecademy.cn

†These authors contributed equally.

ABSTRACT

Transboundary river management is a pivotal topic of international cooperation. There is no doubt that the international management of the Rhine river basin is one of the most successful case. Nevertheless, only a few of the former studies of the Rhine river cooperation applied International Relation theories to the case study. This article intends to compare three different theories in the case and argue that Constructivism better explains the case of cooperation around the Rhine River than realism or liberalism. To do that, this article examines the historical background of the International Commission for the Protection of the Rhine (ICPR) from the year 1950 to 2000. It shows that the success and improvement have made the water resources utilized and preserved effectively and adequately.

Keywords: *Constructivism, International Commission for the Protection of the Rhine (ICPR), Realism, Liberalism*

1. INTRODUCTION

The past three decades have seen a group of studies on Rhine river cooperation, whose focus were various. Some scholars try to analyse the failure of the conventions consented by the contracting parties of ICPR, like Thomas Bernauer uses the transaction cost concept in the Coase Theorem to explain the difficulties faced by the implementation of the Convention for the Protection of the Rhine from Pollution by Chlorides [1]. From the international law perspective, Aaron Schwabach criticizes the former laws aimed at protecting the Rhine for their failure to prevent the 1986 Sandoz Spill [2].

Other works, nevertheless, tries to explain the remarkable success made by the cooperation of riparian states since 1987. Thomas Bernauer scrutinizes the history of the International Commission for the Protection of the Rhine against Pollution (ICPR). He uses a qualitative method to analyse the factors that contributed to the Rhine river's transboundary cooperation. He divides these factors into two groups: actors and background variables, in other words, agents and structure, which is very insightful in analysing the transboundary cooperation cases [3]. Apart from

investigating the distinguished elements for the success of Rhine cooperation, Rainer Durth tried to use the Rhine case to demonstrate that international river cooperation will be implemented more smoothly in an integrated region [4].

There were some objections to mark 1986 Sandoz Spill as the turning point of Rhine international cooperation. Jennifer S. Schiff, who argues that it is an extant historical collaboration that leads to later effective crisis coordination (Jennifer S. Schiff 2017), most scholars (Bernauer, Verweij, and Durth) consent with this point of view [5]. Moreover, Verweij claims that there was a wholesale change in the cooperation of the Rhine river basin after 1986. From 1987 onwards, international cooperation on the protection of the Rhine has been exemplary [6].

Notwithstanding that many scholars try to apply theories to explain the success and failure of Rhine cooperation, only a few of them made an effort to use International Relations theories in this case. Verweij contends in his work that both neo-realism and neo-liberalism are lack explanatory power in the Rhine case. Instead, he tries to demonstrate that grid-group theory is a better theory in this case.

2. CONSTRUCTIVISM: A THEORY WITH MORE EXPLANATORY POWER IN RHINE CASE

2.1. Main ideas of Constructivism

Constructivism as an IR theory was brought by Onuf firstly in 1989, then developed by Alexander Wendt in the 1990s, who provided an alternative path under the background of the debate between "neo-realists" and "neo-liberals". He challenged the very assumption of structural realism and the neo-liberalism that a self-helped system in international society is exogenous. Instead, he argues that anarchy is what states make of it. The debate between "neo-realists" and "neoliberals" has been based on a shared commitment to "rationalism". At the same time, constructivism argued that behaviours and the identities and interests can be altered, which is differentiated from the basis of rationalism [7]. Waltz's claim that his theory is focused on the "third image". That's to say, unlike classical realists such as Thomas Hobbes, Reinhold Niebuhr, and Hans Morgenthau attributed egoism and power politics primarily to human nature, structural realists or neo-realists emphasize anarchy. Wendt argued that the structure of IR exists in interaction or the process among states. It's only after the contact between countries that the IR structure (both material and ideal) begins to exert power [8]. In the perspective of neo-realists, anarchy is given causal power, whereas Wendt doubts this assertion. Instead, he explains that this so-called "third image" theory is based on the predetermined variables on the first and second image. Self-help and competitive power politics are produced causally by interaction processes between states in which anarchy plays only a permissive role [7].

As Wendt noted in both his article and book, the so-called social theory in IR combines the thought of symbolic interaction theory, founded by Mead, in which conceptions of self and interest tend to "mirror" the practices of significant others over time. This principle of identity-formation is captured by the symbolic interactionist notion of the "looking-glass self," which asserts that the self reflects an actor's socialization. Before contact, none of the actors have the perception of others. The identities and interests of one state are constituted after the interaction among states, based on the behaviour of others. For example, if one state acts aggressively to other states for the first time, then the other states will define their relationship as enemies, determining their behaviours. Based on this process, anarchy is a result instead of an exogenous feature of IR. In other words, structure and agents can't be simply divided as structure realism does. It's the interaction that creates the structure in the first place. By systemic interaction, state identities and interests will gradually be determined. Suppose one state tries to change its former behaviour and resort to a new strategy for interacting with

other countries. In that case, it may trigger a systematic change in the whole international society if the condition is appropriate. In general, one of the most significant traits of Constructivism is to challenge the idea of Rationalism that the identities and interests of states are exogenous.

2.2. A revisit to realism in the context of Rhine cooperation

The core principle of realism is the pursuance of self-interest in global affairs. Most of the realism theories regard the country as the behavioural agent. This characteristic is a result of human nature. Realists consider that humans are naturally self-interested, and that this feature manifests itself in state government. Furthermore, the broad ethic cannot be extended to global activity and international diplomacy. [9]

The concept of anarchy is another essential idea in realism. Realists believe that the world is in a state of anarchy, and that wars resulting from power struggles are inevitable since there is no government with supreme authority to oversee the international order. Julian exemplifies that the objective of war is to keep the invader out while maintaining the power balance among competitors.

As for structural realism, according to the Theory of International Politics, Structural realism is considered by many realists and anti-realists alike as the most defensible form of scientific realism. Therefore, neo-realism has a big difference from classical realism theory. Making the connection between the Rhine river and neo realism case, Marco Verweij considered that "Neorealism could perhaps highlight some elements of the antagonistic phase in the history of the international efforts to protect the Rhine. Neoliberalism might shed some light on the consensual era that broke out in 1987. But neither approach could account for the change from the one, antagonistic, phase to the other, cooperative, phase. This is a first element in the history of the Rhine negotiations that existing frameworks of international politics cannot fully explain" [10]. Also, "As neorealism often assumes that it is difficult to distinguish friendly states from foes, or that it is impossible to foresee whether present friends will not turn into enemies in the future, states will be concerned with gaining a military power preponderance over other states" [10]. Therefore, in the neorealist perspective, the negotiation and study of the Rhine case will not be a peaceful scene because there are no permanent friends in the world, only eternal interests. Countries in the Rhine's upper reaches have traditionally had greater control over the river than those in the lower reaches, so disputes over parts of the river are also likely to happen.

2.3. Why Constructivism better explains the evolution in Rhine cooperation in comparison with other theories?

From the perspective of neo-liberalism, especially the theory of externality, the factories in upstream states which need to reduce productivity to improve the water quality will be reluctant to take responsibility. However, according to the research of Bernauer, big chemical companies such as Sandoz and Roche in Basel, or Hoechst, Bayer, and BASF in Germany, are no longer passive and reluctant targets of environmental regulations. Instead, they acted pretty actively in taking the environmental protection responsibility [3]. Some scholars tried to apply game theory in the cooperation of international river basins. They conclude that the game between upstream states and downstream states usually turns out to be a deadlock. Nevertheless, rationalism's approach tends to predetermine the identities and interests of the actors, which the constructivism scholars challenge. In international river basins case cooperation, it's very hard to define a riparian state's consistent interests. In the real world, one doesn't purely focus on the economic interest but also other gains such as reputation.

As for another grand IR theory, neo-realism, one of the most significant drawbacks of it is its inability to explain the systematically evolution of IR, such as the downfall of the former Soviet Union. Neorealism treats the material structure of IR as causal power, which determines the behaviours of agents, so the system will be stabilized at the point when the powers are balanced (Waltz argues that the bipolar system is the most stable one). As a result, structure realism is a static theory neglecting the process and the interaction among agents.

Neo-liberalism, nevertheless, claims to focus on the process of IR and emphasizes the importance of international institutions. However, like neorealism, neoliberalism is also based on the assumption of rationalism that the identities and interests of states are exogenous.

Critical theory scholar Robert Cox defines these rationalism theories as problem-solving theories. He contends that problem-solving theories are only appropriate for analysis of short time scale problems, in which the identities and interests of actors are relatively stable. Constructivism, instead, offers an evolutionary point of view in IR, which enables it with more explanatory power to analyse the systematic change [11].

As for the Rhine case, as Verweij mentions in his article, before 1987, the international cooperation of the Rhine river was unproductive and antagonistic. International programs for the protection of Rhine were far less effective than domestic policies [10]. In stark contrast, since 1987, a strikingly different picture has emerged. A few years ago, the French newspaper Le

Monde acclaimed the Rhine as 'the cleanest river in Europe' (Le Monde, 17 October 1996). What factors contributed to such a tremendous change in the behaviours of the riparian states? By analysing the history of Rhine cooperation before and after the 1986 Sandoz Spill, this article tries to demonstrate that it's the collective identity formation that creates the condition for the successful transboundary cooperation in the Rhine case.

3. COLLECTIVE IDENTITY FORMATION IN RHINE COOPERATION

3.1. Rhine management before 1950: A shift from economics concern to environmental protection

The history of transboundary management of the Rhine river basin can be traced back to the Octroi of the Rhine when a formalized Franco-German arrangement reduced the number of tolls on the river, which also remained after the downfall of the Napoleon rule. The Congress of Vienna in 1815 established the Central Commission for Rhine Navigation (the Rhine Commission) and tasked it with eliminating any of the river's chokepoints hindering commercial traffic. It's very clear that these international arrangements mainly focused on the common interest of economic benefit. Due to the industrial revolution in the riparian states, the water quality of the Rhine plunged dramatically. Downstream countries suffered most from the contamination. Although downstream countries such as Netherland tried to protect the Rhine in 1931, it's not until 1950 that the environmental protection of Rhine was put on the agenda when the riparian states founded the ICPR. It's proper to say that the peace and collaboration of Europe created the condition of transboundary cooperation among riparian states.

3.2. 1963-1986: Failure of transboundary conventions among riparian countries

3.2.1. 1963: Agreement concerning the International Commission for the Protection of the Rhine against Pollution (amended in 1976)

After the first meeting in 1950, when the ICPR stood still as a spontaneous regime, it was not until 1963 that the ICPR was formally constituted. Its original members were Netherland, Germany, French, Luxembourg, and Switzerland. Although the 1963 convention was successfully ratified in the member states in 1965, the convention was lack of binding power. The convention set three rather broad objectives as its tasks: (1) researching the extent of pollution in the river and identifying its sources, (2) mitigating those sources of pollution, and (3) preparing corresponding international

agreements to support those goals (ICPR 1963, Article 2). From these goals, it's very clear that at the beginning of ICPR, it was treated as a monitor for the Rhine pollution. The main concern of the protection was only towards the pollution, especially chemical, of the river.

In the Bonn Convention on December 3, 1976, the 1963 Agreement was amended, and EC (later EU) was included in the ICPR as contracting parties and could vote on behalf of its member states in the ICPR (ICPR 1976). Since only Switzerland wasn't the EC member, Swiss is located in the upper stream, so this clause could also be considered a measure to restrict the power of the upper stream state.

The 1963 Agreement served as the framework of ICPR activities until 1999, superseded by a new convention. Under this framework, two formalized treaties were created. Nevertheless, the implementation of these two turned out to be disappointed.

3.2.2. 1976: Convention for the Protection of the River Rhine against Chemical Pollution and the Rhine Chlorides Convention

Despite the foundation of ICPR, the chemical pollution of the Rhine river increased dramatically in the 1960s. It reached its peak in the early 1970s, which forced the riparian states. Especially downstream state like the Netherland, whose drinking water resources highly depended on the Rhine, to push the process of prevention cooperation. In the 1976 Bonn convention, these two treaties were agreed by the ministers of member states, and in a few years, the treaties have formally come into force.

The Convention on Chemical Pollution required the elimination of certain "Annex I" (most toxic) pollutants in the surface water of the Rhine basin while reducing the presence of "Annex II" (less toxic) classified pollutants in Rhine waters (ICPR 1976a, Article I). However, between 1976 and 1986, only three chemical substances found their way onto the ICPR "Annex I" list. As for the Chlorides Convention, the convention wasn't ratified by the member states until 1983. The conflicts between downstream state Dutch and upper stream state French, who was the main chloride polluter, upon the finance and other distribution issues had not ceased before the late 1990s. Bernauer investigated the whole process of cooperation and concludes that it's the high transaction cost that became the obstacle for treaty implementation.

Apart from transaction cost, the externality is another factor that caused the inefficiency of Rhine management. There are six main riparian states located in the Rhine catchment. However, Netherland is the only downstream country while the pollution from upper stream countries such as French will directly affect the Dutch. If the upstream countries agree to reduce their chemical emissions to the river, Netherland will benefit from it

without any cost, so-called free-riding. As a result, in the case of the chloride, France was unwilling to cut industrial emissions without compensation from the Dutch. At the same time, Holland perceived itself as a downstream victim, therefore reluctant to pay for France's loss.

From the perspective of neo-liberalism, every shareholder of the international cooperation has their fixed identities and interests. Based on this assumption, neo-liberalists argue that through bargain, Pareto optimality might be achieved. Nevertheless, some scholars tried to apply game theory in the cooperation of international river basins. They conclude that the game between upstream states and downstream states usually turns out to be a deadlock. Constructivism, in contrast, argues that the rationalism identity isn't exogenous but can be altered through interaction. In the subsequent sections of this article, the process of the formation of collective identity among the ICPR member states will be discussed.

3.3. Turning point: 1986 Sandoz Spills

After a fire in a warehouse belonging to the Sandoz AG near Basel on 1st November 1986, firefighting water mixed with up to thirty tons of pesticides flowed into the Rhine and killed fish and other organisms along hundreds of kilometres of the Rhine.

"A huge discharge of toxic chemicals into the Rhine is confronting Europe with one of its worst ecological disasters in recent years." "Spokesmen in France, West Germany, the Netherlands, and Switzerland -the four countries through which the Rhine flows - said today that it was in danger of becoming a "dead" river as the chemicals kill off fish and destroy the ecological system of the vital waterway"(New York times 1986). As reported in the newspaper, the 1986 Sandoz Spill in Swiss was a horrible disaster. About 10,000 to 15,000 cubic meters of water mixed with highly dangerous chemicals, flowed into the bordering Rhine. The polluted water wiped out most of the local species in the Rhine and forced the riverside waterworks to be shut down. In France, fourteen people had to be treated for fume poisoning.

The spill had a devastating effect on the fauna of the Rhine. In the days following the spill, thousands of dead fish (including 150,000 dead eels), as well as numerous dead waterfowl, washed up along the banks of the Rhine. Also, while the polluted water flowed downstream, the Swiss agency failed to alarm the downstream countries in time, which was condemned by other riparian states. This was considered a failure of the monitor system built earlier by the Rhine conventions.

The calamity triggered the outrage of the public in the riparian states. This was the first time that citizens from Switzerland downstream to the Netherlands

demonstrated solidarity with the Rhine and its protection. The protestors even spat the manager of the Sandoz AG. The considerable public pressure exercised on the states' governments in the Rhine catchment contributed to the increasing influence of the ICPR.

Apart from the Spill itself, some background factors intensified the impact of the incident. (1) The infamous Chernobyl accident happened in the same year as the Sandoz Spill, which undoubtedly strengthened the public's crisis sense. In the protest in France, the protestors claimed that the Spill was the Rhine version of Chernobyl. (2) The public's attention to environmental issues continued to rise from the 1970s to the 1980s. In Germany, the United Kingdom, Sweden, Switzerland, and the Netherlands, the public pays more and more attention to environmental issues. From 1988 to 1989, the percentage of French people who thought that "the environmental quality must be improved at any cost" increased from 65% to 80%. What's more, in the 1970s and 1980s, the number of residents of riparian countries of the Rhine River who participated in environmental protection increased significantly. (3) The growth of green parties in riparian states. The German Green Party has the longest history and the greatest power. It received 5.2% of the votes in the 1983 West German federal seat election and the highest approval rate (8.3%) in the general election after the Sandoz chemical incident in 1987.

Although the Switzerland government did compensate for the loss caused by this catastrophe in downstream countries nevertheless, most of the actors were still dissatisfied. However, none of the countries filed a lawsuit against Swiss as recommended in the 1963 Rhine convention (ICPR 1963). Still, the public pressure forced the riparian government to act.

3.4 1987 Rhine Action Programme: a significant mark of the collective identity formation

Within a short time, three Conferences of Ministers were staged, leading to the adoption of the Rhine Action Programme in 1987. Its target was to improve water quality to such an extent that formerly indigenous species, such as salmon, would return to the river. A consequence of the Rhine Action Programme was that requirements concerning municipal and industrial wastewater treatment plants became distinctly stricter, and a third treatment stage was introduced to eliminate phosphorous and nitrates. The first survey in 1992 already gave evidence of a considerable reduction of pollutants. At the same time, the entire ecosystem was supposed to be enhanced together with the improved chemical water quality, and flora and fauna were to be strengthened. The salmon went back to breed in the Rhine again in the late 1990s, several years ahead of the initial plan.

In stark contrast, the RAP achieved great success compared to previous conventions. Riparian states seemed to overcome the obstacles of free-riding and high transaction costs. Scholars like Verweij, Schiff, and Durth have found a bunch of insightful reasons for the success of RAP, including the participation of NGOs, the flexibility of the laws, homogenous degree among riparian states, etc. Notwithstanding, this article intends to view the case from a constructivist perspective. It's known that the Netherlands was the most active promoter of the Rhine cooperation due to its downstream location, so it's appropriate to define the Dutch as a status quo changer. However, in the first three decades, the effort by the Dutch to form a consensus to deal with pollution in the Rhine faced consistent setbacks. In 1979, The Dutch government even recalled its ambassador in France to protest the unwillingness of the French state to implement the Chlorides Convention. This was the most severe diplomatic incident in the relations between the governments of France and the Netherlands since at least 1945. Although the agreed conventions were successfully ratified and implanted in the domestic level, in the so-called third image of IR, riparian governments still held the stance to protect traditional "national interest", which led to the tragedy of the commons [12].

After the Sandoz Spill, the interests of all riparian states were harmed, this greatly changed the subsequent move of the previous self-interested states. For the first time, the Dutch government's appeal was responded to with positive feedback, which the success of the cooperation would reinforce. As Wendt correctly points out, the state's new identity needs to receive positive feedback from others to strengthen this assumption of self, the so-called "self-fulfilled prophecy" (Wendt 1999). The Dutch have been the one whose interests need collective identity formation since the beginning of the cooperation. However, the riparian states didn't accept this identity until the Sandoz Spill, when there was finally the opportunity to draw the consensus of riparian states to define the environment of the whole river catchment as their interests. The change of the identities was represented in the objectives of conventions of Rhine after 1986. (1) The most symbolic goal of RAP is to reintroduce salmon back to the Rhine river. To achieve this goal, unified efforts are needed for all the riparian states to improve the entire ecological system in the Rhine. It is quite different from just decreasing chemical pollution in the previous conventions, for another, salmon fishing has been one of the most significant commercial activities in the Rhine since 19 century, which gave salmon profound cultural meaning for the salvation of the river. (2) By comparing the main objectives of the ICPR conventions between the 1976 convention and the 1999 convention that superseded it, it's very clear that the convention's goals shifted from a sole focus on pollution to multiple concerns that entailed the equal and joint effort from riparian states. In the 1999

Convention on the Protection of the Rhine, new goals such as the Rhine ecosystem is to be sustainably developed, holistic flood prevention and protection taking into account ecological requirements and relief of the North Sea were assigned to the ICPR (Convention on the Protection of the Rhine 1999).

3.5 1999 onwards: Rhine cooperation under EU context

The success of RAP reinforced the collective identity of riparian states, which triggered further development of Rhine protection and the adoption of unified EU regulations. In January 2001, the ministers in charge of the Rhine adopted "Rhine 2020", the "Programme on the Sustainable Development of the Rhine," following the most successful "Rhine Action Programme" (1987-2000). It determines the general objectives of the Rhine protection policy and the measures required for their implementation for the next 20 years, including surface requirements and deadlines. Intermediate objectives have been defined with a view to success control. The Balance on the Implementation of the Measures of the Programme "Rhine 2020" until 2005 shows first success and that further efforts are required (Rhine 2020).

In 2000, The EU adopted the Water Framework Directive (WFD) (European Parliament and Council 2000), which fused the many disparate mechanisms of European water management into one unified policy for application across all transboundary EU water resources, including the Rhine. All these actions had undoubtedly strengthened the collective identity sense among riparian states, therefore altering their previous interests in the Rhine catchment. Under the unified and compulsory norms of the EU, there is no doubt that the collective identity of riparian states has evolved from cognitive change to institutionalization.

4. CONCLUSION

By reviewing the former researches of transboundary cooperation of the Rhine river basin, it's apparent that few works have analysed the issue from the perspective of IR theories. This article compares three major IR theories (Structural Realism, neo-liberalism, and Constructivism) in the Rhine river cooperation case. Due to the lack of any signs of power politics in the negotiation between upstream countries and downstream countries, and there was no hegemony power in the riparian states, realistic logic seems inappropriate in this case. As for neo-liberalism, although some scholars successfully analysed some situations of international cooperation using game theory and Coase theorem, the rationalism assumption of neo-liberalism is short of explanation in the Rhine case. The alternative of the identities and interests of the riparian states and the implementation of shared norms indicate that

Constructivism is the best theory to be applied to the Rhine cooperation.

REFERENCES

- [1] Thomas Bernauer (1995) The international financing of environmental protection: Lessons from efforts to protect the river Rhine against chloride pollution, *Environmental Politics*, 4:3, 369-390, DOI: 10.1080/09644019508414212
- [2] Schwabach, Aaron, The Sandoz Spill: The Failure of International Law to Protect the Rhine from Pollution *Ecology Law Quarterly*, Vol. 16, Issue 2 (1989), pp. 443-480
- [3] Thomas Bernauer and Peter Moser, *Reducing Pollution of the Rhine River: The Influence of International Cooperation*, International Institute for Applied Systems Analysis, 1996
- [4] Durth, R. 1996a: Der Rhein — ein langer Weg zum grenzüberschreitenden Umweltschutz, in: *Aus Politik und Zeitgeschichte B7/96*, pp.38-47.
- [5] Schiff, J.S. The evolution of Rhine river governance: historical lessons for modern transboundary water management. *Water Hist* 9, 279-294 (2017). <https://doi.org/10.1007/s12685-017-0192-3>
- [6] Biesheuvel, P. M., & Verweij, H. (1999). Theory of cast formation in electrophoretic deposition. *Journal of the American Ceramic Society*, 82(6), 1451-1455.
- [7] Alexander Wendt, *Anarchy is what States Make of it: The Social Construction of Power Politics*, *International Organization* Vol. 46, No. 2 (Spring, 1992), pp. 391-425 (35 pages), The MIT Press
- [8] Waltz, Kenneth (1988) The Origins of War in Neorealist Theory, *The Journal of Interdisciplinary History*, Vol. 18, No. 4, The Origin and Prevention of Major Wars (Spring, 1988), pp. 615-628
- [9] Julian, K.-K. W. (2010). *Political Realism in International Relations* (Stanford. Encyclopaedia of Philosophy). Stanford.Edu. <https://plato.stanford.edu/entries/realism-intl-relations/>
- [10] Marco Verweij, A Watershed on the Rhine: Changing Approaches to International Environmental Cooperation. *Geo Journal* 47.3 (1999): 453-461
- [11] Robert Warburton Cox, *The Political Economy of a Plural World: Critical Reflections on Power, Morals, and Civilization*, 2002
- [12] Garrett Hardin, *The Tragedy of the Commons*, *Science*, New Series, Vol. 162, No. 3859 (Dec. 13, 1968), pp. 1243-1248.