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Solving the Collective Action Problem

A Comparative Study of the Climate and Trade Policy Processes

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Abstract

It is the purpose of this essay to compare the trade policy process with the climate policy process within a collective action framework in order to determine differences and similarities. With the recognition that the trade process has been more successful in mitigating the Prisoner's Dilemma this comparison provides lessons for the climate process. The study is conducted through an analysis of how the processes compare with respect to iterated games, group size, monitoring and compliance and finds that some significant differences exist. The differences can be said to embody two different approaches to international governance. The trade process, on the one hand, can be characterised by a building blocks approach where a non-comprehensive agreement has evolved into an effective international organisation. The climate process, on the other hand, is characterised by a grand bargain where a comprehensive single undertaking approach has been unsuccessfully attempted, thus leading to a breakdown of trust and an ineffective regime. The lesson is thus to rethink the climate process and attempt a building blocks approach to solve the collective action problem.

Keywords: *Collective Action, Prisoner's Dilemma, International Policy Processes GATT, UNFCCC*

Words: 9789

List of Abbreviations

CDM – Clean Development Mechanism
COP - Conference of the Parties
DSM – Dispute Settlement Mechanism
ERT – Expert Review Team
GATS – General Agreement on Trade in Services
GATT - General Agreement on Trade and Tariffs
GDP – Gross Domestic Product
GHG – Greenhouse Gas
ITO – International Trade Organization
MFN – Most Favoured Nation
MRV- Monitoring, Reporting and Verification
TPRM – Trade Policy Review Mechanism
TRIPS – Trade-Related Aspects of Intellectual Property Rights
UNCED – United Nations Conference on Environment and Development
UNCTAD – United Nations Conference on Trade and Development
UNFCCC - United Nations Framework Convention on Climate Change
WTO – World Trade Organization

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1 Introduction

At the World Trade Organization (WTO) Ministerial Council in Seattle 1999 the streets were filled with anti-globalisation-protesters. Ten years later in Copenhagen, at the United Nations Framework Convention on Climate Change (UNFCCC) Conference of the Parties number 15 (COP15) protesters once more took to the streets. This provides a rather interesting contrast between trade policy and climate policy. The protesters in Seattle thought that international trade had gone too far and blamed the WTO for jobs going abroad, environmental degradation and bad work conditions in poor countries. The environmental protesters on the other hand, thought that the actions so far taken to mitigate climate change were not powerful enough to save the planet. When the General Agreement on Trade and Tariffs (GATT) was created in 1947 the drafters aimed to achieve increased trade after the catastrophic consequences of protectionism in the interwar period and the process has been incredibly successful if measured by the standards of 1947. The climate process on the other hand, beginning with the creation of the UNFCCC at the so-called Earth Summit in Rio de Janeiro in 1992 has resulted in one legally binding protocol, the Kyoto Protocol that by many standards has not been effective in mitigating climate change and currently there seems to be little or no progress.

This essay intends to analyse in which ways the climate policy process is comparable to the trade policy process in order to determine similarities and differences between the two and in turn discuss whether the differences in process can explain the difference in outcome, thus in effect providing lessons from the trade process to be applied on the climate process.

1.1 Background

As the creation of the GATT may very well ay be seen as the failure to fully implement the Havana Charter and thus creating the International Trade Organization (ITO), this does in no way imply that the GATT itself started out as a failure. The GATT held its first negotiation round in 1947, and as a result large tariff cuts were implemented on a most favoured nation (MFN) basis (Irwin 1995, 325). Subsequent negotiation rounds have decreased trade barriers and finally, at the conclusion of the Uruguay round in 1994, established an international organisation called the WTO.

The main principle of GATT/WTO is non-discrimination in trade practices. This is encompassed in the MFN clause and the principle of National Treatment. MFN means that the same treatment must be given to all WTO members as is

given to the most favoured, meaning that it is not allowed to discriminate against a particular country. National Treatment stipulates that foreign goods be treated the same as domestic goods, in order for nations not to discriminate against foreign producers (Hoekman and Kostecki 2009, 41f). A usual misconception is that GATT/WTO is supposed to promote free trade, this is however not an explicit goal of the agreements. The objectives are to increase the standards of living through increased and non-discriminatory trade to make the utilisation of the world's resources more effective (Hoekman and Kostecki 2009, 47). In 2006 the volume of trade had increased 27-fold since 1950 which is more than the 9-fold increase in global GDP and GATT/WTO has been instrumental in this increased trade and thus more efficient allocation of resources in turn spurring economic growth (Hoekman and Kostecki 2009, 7). There are certainly drawbacks and contentious issues but in long perspective and with the original objectives in mind the trade process can be considered an overall success.

The UNFCCC was created in 1992 at the Earth Summit in Rio as concerns for global warning grew. There was agreement that action was needed but no binding commitments were made. Still, the UNFCCC provided a negotiation forum with regular Conferences of the Parties (COP), which eventually led to a binding agreement within the Kyoto protocol (Helm 2009, 16). This protocol included the principle of common but differentiated responsibilities between developed and developing states where so called Annex 1 countries were the only ones that had to make commitments to lower carbon emissions in the first commitment period (2008-2012), it is unlikely that the compliance will be high as the period ends in 2012 and the commitments are not even strong enough to have a significant effect on global warming (Helm 2009, 17f). Moreover, the negotiations of a new commitment period after 2012 has stalled (Clark 2011). The protocol also set up structures for transferring money to developing countries through the Clean Development Mechanism (CDM) that allowed developed countries to invest in projects that reduce greenhouse gas (GHG) emissions in developing countries and then emit more themselves, but there are doubts as to the effectiveness of CDM as well (Subbarao and Lloyd 2011, 1610). Overall the climate process is deemed to be a failure if judged by the ambitions at the Earth Summit.

1.2 Issue

In the light of the recent breakdown of climate negotiations in Copenhagen and the meek recovery in Cancun it may be worth rethinking the strategy pursued by climate negotiators within the UNFCCC. Much like the trade policy, climate change policy is supposed to solve a classic collective action problem popularly called the Prisoner's Dilemma. It is therefore relevant to analyse the trade process after, with its various failures and successes, in order to better understand the climate process and what pitfalls may lie ahead. To give the reader a clear understanding of this papers intention, it may be fruitful to consider the issue at hand as a manifestation of the same general problem in different periods of time.

The collective action problem is the underlying object of investigation, which has been met differently in the two different policy processes, hence giving different levels of success in the creation of functional policy.

1.3 Formulation of Research Question

- Can achieving free trade and mitigating climate change be classified as the same type of collective action problem?
- How does the post world war II international trade policy process compare to the climate change policy process within the UNFCC, with respect to effectiveness in solving the collective action problem?
- Are there any lessons from the trade process that can be applied on the climate change process?

1.4 Limitations

Given the enormous task of comparing two international policy processes which as well as being initiated during different periods of time, also differ immensely in terms of their structure and implementation, there is an urgent need for a reasonable limitation. The essay will be limited to study the formal institutions and agreements within GATT and WTO and not other aspects of international trade policy, as well as the UNFCCC and the Kyoto Protocol as they encompass the largest effort in international governance to mitigate climate change.

2 Theory and Methodology

The purpose of this chapter is to provide a general explanation of the collective action problem and to motivate why the trade and environmental policy processes can be seen as cases of the collective action problem referred to as the Prisoner's Dilemma. Furthermore the subject of methodology will be discussed, explaining this papers comparative approach and motivating the case selection. Also, a number of suitable points of comparison for our analysis will be presented.

2.1 Methodology

This study will take the form of a qualitative asynchronous comparative study where the case of the global climate policy process is compared to the case of world trade policy. The analysis will emanate from the extensive literature on collective action problems and each process will be evaluated against theoretical work on how to mitigate such collective action problems.

2.1.1 Research Design

In order to make a relevant comparison of the two policy processes it is most important for this paper to find relevant points of comparison, meaning that the results in terms of differences and similarities need to be focused and comparable in a meaningful way. This is why the paper aims at developing several points of comparison, which will be representative of the collective action problem on a general level. Each policy process will be examined on these points in order to determine differences and similarities in the policy processes and whether they can be thought to explain the differences in outcomes. The comparative study is a most similar design study, which means that it can give grounds for some utterances as to the causality. If it can be established that the climate policy process and the trade policy process are addressing a similar problem factors such as the design of the policy process can be established as an independent variable (cf. Esaiasson et al. 2007, 112ff). But it is not enough just to demonstrate a correlation to establish causality, the mechanisms governing the causality must be put forward with references to the specific organisational order that determines the relation of events (Drakopoulos and Torrance 1994, 179). This essay aims to accomplish this through using collective action theory and more specifically the prisoner's dilemma game as a theoretic framework.

2.1.2 Selection of Cases

The most important argument for why the climate process is an interesting case to study is that is considered to be an unsuccessful case of global governance (Vogler 2010, 2686). Is there a more successful process that it can be compared to? Many studies have compared the climate change process to other environmental agreements such as the Montreal Protocol governing emissions of ozone depleting chemicals (Falkner, Stephan, and Vogler 2010, 254), This study will however compare it to the trade process. This is due to the fact that the case for the comparison of climate change policy and ozone protection chemicals as being a most similar design study is weak. The Montreal Protocol deals with the emissions of ozone-depleting chemicals (Falkner, Stephan, and Vogler 2010, 254), which by logic however arise from fewer sources and includes fewer actors than climate change, even though both processes deal with emissions. The trade policy process can be thought of as a more suitable comparison for the climate change policy process since a broad array of interest groups and industries are involved in both these complicated problems.

2.1.3 Material

The material used in this study is mainly theoretical literature on collective action and scientific works on the two policy processes which are analysed. A number of articles and books by renowned authors in the field have been consulted and when needed. As this papers intention is not to simply compare the two policy process but to compare the with respect to the collective action problem, the material needed has been rather specific, making it possible to narrow down the search to very good second hand material. Making an extensive analysis of first hand material such as conference proceedings, treaties and protocols etcetera would be too extensive a project and would not contribute materially to the findings since these sources has already been comprehensively studied by numerous scholars.

2.1.4 Limitations to Methodology

There are many problems with all methodologies in the social sciences. One that is present in this case is the risk of omitted variables. It is important to remember that the world system in the aftermath of WWII looks very different from the system that emerged after the fall of the Soviet Union, which was when the climate process started. This difference in balance of powers may be an important explanatory variable that is neglected in this essay and the reader is asked to bear that in mind.

Moreover it is problematic to make generalisations from such a small number of cases. This methodology does study them both in detail and may provide some valuable lessons for the climate policy process but is not necessarily prescriptive in a broader sense.

2.2 The Collective Action Problem

The collective action problem should be understood not as one specific problem, but as a systematic underlying problem that infects nearly all forms of collective action. Thus, it is important to comprehend that this problem is not restrained to a given setting (number of actors, issues being discussed, etc.), but rather constitutes what can be understood as an empty theory. This means that the collective action problem may be observed in almost any situation including individuals that form a group in order to better achieve their common and individual interests. The essence of collective action is that being a group of individuals with a common interest does not ensure that all individuals of the group will contribute towards the collective costs of achieving this goal (Olson 1965, 2). This is well explained as Olson argues that "Unless the number of individuals in a group is quite small, or unless there is coercion or some other special device to make individuals act in their common interest, rational self-interested individuals will not act to achieve their common or group interest" (ibid.).

When further investigating the origin of the collective action problem, a closer look at the two cornerstones of this theory is imperative. These are the twin-axioms of self-interest and calculative rationality. In terms of self-interest it is vital to see that "Common interests need not mean collective pursuit of common goals" (Reisman 1990, 143). Following from this is the idea that a strictly self-interested actor would actually have to realize that he, given that he cannot be excluded from the sharing of the collective good among the group, should let the other members of the group pay the costs (Reisman 1990, 143). Calculative rationality on the other hand leads Olson to assert that an absolute majority of action taken by individuals will be based on rational thinking, meaning that altruistic or irrational behaviour very well may exist but that it is usually of no practical importance (Reisman 1990, 147). Again Olson states that, since a majority of actors will be guided by self-interest, "each actor would prefer that the other pay the entire cost" (Olson 1965, 21).

Even if it is quite intuitive to understand the collective action problem, it is far from this papers intention to claim that all types of collective action also suffer from the collective action problem. There are for instance a rather wide variety of "privileged groups" which include at least one member with an incentive to see that the collective good is provided, even if he himself has to carry the full cost of providing it (Olson 1965, 50). It is however beyond the scope of this essay to deal with these groups, since the objects of analysis lies within an arena with a clear collective action problem.

2.3 The Prisoner's Dilemma

The Prisoner's Dilemma can be illustrated in the following way, showing how payoffs will differ depending on the actors' choice of either co-operation or defection. Although the optimal solution is that both countries co-operate it is unlikely to be achieved since the dominant strategy is to defect regardless of what the other actor does.

Table 2-1

		Country B	
		Cooperate	Defect
Country A	Cooperate	1,1	-1,2
	Defect	2,-1	0,0

2.3.1 Why Climate Change Mitigation is a Prisoner's Dilemma

The degradation of the environment is commonly expected whenever many individuals use a scarce resource in common. This problem is formally known as Hardin's "tragedy of the commons"(Ostrom 1990, 2), which often has been thought of as a Prisoner's Dilemma game. When looking at table 2-1, this can be represented in the following way: If the two actors, in this case shepherds, would have access to a common pasture then their options of co-operation or defection would represent their decisions in terms of the number of animals they decide to put on the pasture (Ostrom 1990, 4). Here co-operation can be thought of as letting two animals per herder onto the pasture, and defection can be thought of as each herder letting as many animals as he thinks that he can sell at a profit onto the pasture. Now the problem turns out to be that since the dominant strategy is for each herder to defect, both herders will end up with zero profit. This is so since the amount of animals that can be supported by the pasture is finite. However if one individual defects and the other co-operates the latter will not be able to stop the pasture from deteriorating, but simply lose his opportunity to draw any short-term benefit from having a larger amount of animals on it.

So why then is the climate change mitigation process actually a case of the Prisoner's Dilemma? As explained above, actors will tend to overuse common pool resources and since the atmosphere is such a resource the protection of it is a Prisoner's Dilemma game.

2.3.2 Why Trade Liberalisation is a Prisoner's Dilemma

The gains from trade are a cornerstone of neoclassical economic theory. Free trade allows countries to focus on industries in which they have a comparative advantage, thus making the allocation of resources more efficient in order to generate larger consumption possibilities (cf. Markusen et al. 1995). Nonetheless, trade protection and mercantilism has been the norm for a long time. There are many reasons to why a government would like to restrict trade even if it increases overall welfare. One main reason is though a classical form of public choice

problem; the gains from low import tariffs and quotas are captured by many consumers in small amounts. One example is the sugar program of the United States, that limits imports thus pushing the price up, costing consumers $1.9bn a year whereas sugar producers gain about $1bn, leaving a total cost to society at large of $900m (Beghin et al. 2003). Why would a government impose such a costly policy? Consider the individual consumer losing about $6 in a year; it is unlikely, and indeed irrational, for that consumer to spend time on trying to convince their congressman that this is a bad policy or to start organising protests. The sugar industry on the other hand, is a rather small industry concentrated to a few states, where it is an important source of employment. Standing to lose $1bn, which means hundreds of thousands for each sugar grower, from allowing free trade they are very inclined to organise and lobby congress to keep the sugar program in place. Concentrated gains and dispersed costs creates a political economy where the ones who gain lobby harder and are able to swing elections in states where the gains are present, making a domestic political economy skewed towards trade protection even if the society as a whole stands to lose (cf. Krugman and Obstfeld 2009, 74f).

Why does this make achieving international trade a prisoner's dilemma? Consider the optimal situation for the government of Country A, that would be to have high import tariffs in order to satisfy powerful industries that are important employers able to influence the prospects of re-election as well as Country B having low import tariffs so that the export industry of Country A could access that market. That is obviously the worst situation for Country B. Moreover, both countries defecting, i.e. imposing high levels of trade protection means that both countries will be dependent on their own resources, not able to gain from their comparative advantage. Both countries cooperating, i.e. allowing free trade, maximises global welfare but is still not the preferred option when countries set their trade policies unilaterally. Country A's preference order is defect (D)-cooperate(C) - > C-C -> D-D -> C-D whereas Country B's preference order is C-D -> C-C -> D-D -> D-C. Why doesn't mutual cooperation occur? If Country A choses strategy C, Country B will prefer strategy D and vice versa giving a Nash Equilibrium at D-D making it a classic case of the prisoner's dilemma (cf. Hoekman and Kostecki 2009, 147f).

2.4 Points of Comparison

In order to compare the trade policy process with the climate policy process in a fruitful way it is necessary to develop a few relevant points of comparison. For the purposes of this study, four such points, all related to mitigating the collective action problem identified within both processes, are to be elaborated upon.

1. Iterated games
2. Group size

3. Monitoring mechanisms
4. Compliance mechanisms

The reason for choosing these criteria is that they are all related to some aspects of the prisoner's dilemma game and insuring trust among players that can allow for successful mitigation.

2.4.1 Iterated games

The collective action problem, manifested as a Prisoner's Dilemma game, has a multitude of implications for the actors involved. One of the most striking implications however is the individual's short-run incentive to defect that stands in strong contrast to the long-run incentive to cooperate. This is well explained by Axelrod as he argues that "[s]ince the game is a Prisoner's Dilemma, the player has a short-run incentive to defect, but can do better in the long run by developing a pattern of mutual cooperation with the other" (1984, 109). Following from this is that one of the best ways to achieve any sort of shift towards cooperation is for actors to meet several times, meaning that the Prisoner's Dilemma becomes an iterated game.

Looking at the iterated Prisoner's Dilemma game on a more specific level, which can be done by taking the point of view of one of the actors in the game, it becomes quite clear as Axelrod argues that "[i]t is impossible to find a general solution to the Prisoner's Dilemma" (1984, 27). However Axelrod identifies some strategies as being generally more successful than others, making an important point out of the so-called tit-for-tat-strategy. This strategy, consisting of initial cooperation (the first move) followed by the opponents latest action (all following moves), has been the winner in both of the computer tournaments hosted by Axelrod (Axelrod 1984, 31).

Keohane develops the concept of reciprocity in international relations in his landmark article published in 1986. Reciprocity can be said to consist of contingency and equivalence. Contingency being the conditionality implied in a reciprocal exchange, or the 'for' in "tit-for-tat". It implies that cooperation is responded to with cooperation and defection responded to with defection. Thus contingency and thus reciprocity in iterated games need not imply cooperation, and he takes the "chilling phrase 'a reciprocal exchange of nuclear weapons'" (Keohane 1986, 10) as an example of how reciprocity can imply defection on the international arena. Once a series of defections has occurred, actors playing the tit-for-tat-strategy are locked into a spiral of negative reinforcement feeding further defection indefinitely. Equivalence can mean different things, in bilateral exchanges among equals it may refer to the strict equivalence of benefits but social exchange researchers are careful not to give equivalence such a strict definition. Equivalence can be present among unequals as well, where exchanges are of "mutually valued but noncomparable goods and services" (Keohane 1986, 6). In the market of international relations further problems arise, since many of the services 'traded' between nations do not have a market price; "[h]ow is one to

ascertain the relative value of a superpower's pledge to protect an ally from attack, on the one hand, and the ally's willingness to accept stationing of the superpower's troops in its territory, on the other?" (Keohane 1986, 7). In a multilateral setting, it may get even more complicated since there are not two players but hundreds of them with different domestic predicaments and global ambitions.

2.4.2 Group Size

When arguing that group size is an important variable of the collective action problem, it can be expected to be intuitive that a large group of actors will have a harder time achieving cooperation than a small group of actors. On a general level this is portrayed by Olson who argues that large groups should be thought of as "meetings that involve too many people, and accordingly cannot make decisions promptly or carefully" (1965, 53).

For this point of comparison the aim of this essay is to compare the group sizes in the trade and climate processes and to, based on Olson's arguments in this specific area, evaluate their contribution towards the mitigation of the collective action problem.

Moreover the free-riding problem may be exacerbated in a large group. Climate change mitigation and trade liberalisation is viewed upon as public goods, because of the globality of the greenhouse effect and the MFN principle automatically extending trade concessions made to one contracting party to all parties. Thus, if two countries negotiate a specific tit-for-tat that is mutually and roughly equivalently beneficial, relative power concerns may stop them from implementing this since both the tit and the tat will extend to a third party that did not have to give up anything. To achieve cooperation in this kind of environment a sense of obligation must exist. Keohane compares this to provision of local public goods in small communities, such as a park. If enough people donate to build the park, a sense of obligation may emerge that can prevent people from free riding. This kind of social pressure in a group can be called diffuse reciprocity and may emerge if there is such a sense of obligation and trust within a group, much more easily obtained in a smaller group of countries with similar interests (Keohane 1986, 19ff).

2.4.3 Monitoring

Building trust between the parties to a continuous policy process is, as already pointed out, essential. In the case of an agreement there has to be a mechanism for monitoring the compliance to the terms agreed. In the situation of a repeated prisoner's dilemma game where players pursue a tit-for-tat strategy it is important to know how the counterparts actually behave, not how they said they would. For example, it is not meaningful to establish an agreement on reciprocally reducing emissions of a pollutant unless the parties have access to credible data on each

other's emissions. This is due to the fact that an inherent incentive to cheat, or free ride, exists in the prisoner's dilemma game.

Monitoring is crucial if functional cooperation is to be attained, not least since it provides the foundation for any type of compliance mechanism (Udéhn 1993, 247). To achieve good monitoring in international governance it is not necessary with a supranational body that has complete access to all information. There are cases where the players can monitor each other or employ an independent monitor, such as the referee in a football game, to give independent judgements (cf. Ostrom 1990, 16f). This essay will disseminate how monitoring is conducted within the two policy processes and discuss the relative effectiveness of such monitoring.

2.4.4 Compliance Mechanisms

This point of comparison will look at the ways compliance is achieved. There theoretical body of work in this subject is suffering from large difficulties in demonstrating what causality is governing the compliance to international treaties (Simmons 1998, 77). The rationalist framework tends to look at incentives to comply and many have suggested that the best compliance mechanism is a good monitoring and adjudication system that can determine whether a country is in compliance or not and that the main cost is reputational, i.e. a country that does not comply for short-term gains may lose significantly from not being able to make credible commitments in the future (cf. Simmons 1998; Chayes and Chayes 1993; Nentjes and Klaassen 2004). However, there may be other costs involved such as punishments of different sorts to insure that not only reputation is at stake, but some tangible loss is incurred by countries that are not in compliance. This can in theory increase compliance but may not lead to effectiveness since high non-compliance costs may induce countries not to sign the agreement or to only agree to a toothless agreement to which they would comply anyways (Simmons 1998, 78).

3 Results and Analysis

3.1 Iterated Games

3.1.1 The trade process

GATT was set up to allow for iterated rounds of multilateral trade negotiations to negotiate tariff reductions in the so-called schedule of concessions annexed to the agreement. Eight trade rounds have been concluded so far and the last one, the Uruguay round, finished in 1994, was the most comprehensive one constituting the WTO. Through these rounds, with a pre-specified agenda and date of completion, the GATT has gone from being a small agreement governing the tariffs on manufactured goods to a comprehensive body of laws governing many aspects of trade in goods (GATT) and services (GATS), intellectual property protection (TRIPS) among other things, overseen by an international organisation (Hoekman and Kostecki 2009, ch. 1).

In all transactions trust is an important facilitator. Since the trade system is set up to provide iterated negotiations the negotiators have an incentive to establish a reputation of being cooperative in since defection may induce counterparts not only to effect simultaneously but also for an indefinite number of future negotiations making the cost of defection higher. Hoekman & Kostecki contributes the "incentive to invest resources in establishing a reputation" (2009, 177) to the iterated games.

Issue linkage is a part of all negotiations; it means that by connecting issues to each other the chances of a successfully bartered solution increases as different actors have different priorities. They can play in important role since they "allow side-payments to be made" (Hoekman and Kostecki 2009, 154). Making an agreement within one issue where there are overall gains to be made that are not equally distributed is hard, but an agreement in that field can still be achieved if it is made contingent upon agreement on another issue where the gains are skewed toward the actor who did not reap gains from agreement on issue one. Combining issue linkage with trust in iterated games can create something we would like to denote intertemporal issue linkage. Keohane reminds the reader of the risk with simultaneous exchanges when he introduces the concept of debt and credit and their relation to reciprocity in international relations.

> If simultaneous exchange alone were possible, few agreements could be made since issues frequently arise sequentially and an appropriate 'quid' for a 'quo' may be impossible to find at any given time. Furthermore, in simultaneous exchange,

> obligations never exist, since the exchange is balanced at every moment. There is never a 'debt' or a 'credit'
>
> (Keohane 1986, 21f)

Credit is derived from the past participle of the Latin verb crēdere which is usually defined as to trust or to commit (Nelson 2011). In absence of trust there can be no credit and in the absence of credit, in a wider sense than a particular contract concerning the lending of money, it is impossible to achieve sequential exchanges as defined by Keohane (1986). Being able to trade concessions today with promises of bringing something to the agenda in the next round is usual with the example of how the Uruguay round was concluded with promises to bring up sensitive points such as agricultural liberalisation in the developed world in a forthcoming round, and, indeed, many of those issues have been moved to the agenda in the, yet to be concluded, Doha round of multilateral trade negotiations (Hoekman and Kostecki 2009, 139f). This way of intertemporal issue linkage allows for more comprehensive agreements with conditionality and contingency mechanisms that can induce compliance and build trust in a way impossible with simultaneous agreements.

The overall picture given of the trade negotiations with respect to their iteration has thus far been rather positive. However there are some problems that have emerged from this process. One is the fact that tariffs that economically or politically makes no sense at all for a country may become valuable as bargaining chips in future negotiations making countries reluctant to lower tariffs without getting anything in return (cf. Keohane 1986).

3.1.2 The climate process

The UNFCCC was set up as a forum for negotiations on a future global climate deal and a forum for scientists and other experts to evaluate the threat and recommend future policy responses. In that sense "[i]t promised much and cost little" (Helm 2009, 17). Since 1992 there have been regular Conferences of the Parties (COP) where all the parties to the UNFCCC meet on a regular basis to negotiate international climate policy, it is from the third COP that the Kyoto Protocol emerged (Helm 2009, 18). This is a form of iterated negotiations game in which players can be expected to use a tit-for-tat strategy. However, this particular process has not fostered an environment of trust and cooperation but rather a large divide between developing countries and developed countries (Nelson 2011; Clark 2011). Helm argues that a basic prerequisite for an agreement on mitigation is "the allocation of responsibility for the existing stock of carbon in the atmosphere" (2009, 19). That is only one example of many other outstanding conditions for agreement and thus it may have been premature to start treaty making on mitigation. For example both China and the United States have not ratified the Kyoto Protocol over such a dispute (Falkner, Stephan, and Vogler 2010, 256f). As Keohane points, out defection can breed defection in iterated games if players use a tit-for-tat strategy (1986, 10). If that is the case the

prospects for increasing trust and cooperation among the players are not very high since many important GHG-emitters have a history of defection.

3.1.3 Differences and similarities

Both processes have incorporated elements of iteration in the negotiations, as would be prescribed by existing game-theoretic frameworks. However the trade process has managed to build an open trade regime block by block, whereas the climate process has often been deadlocked and not achieved much mitigation of climate change. It is possible that the climate process is more complex and will eventually take off in a spiral of mutual cooperation but the question is if there is enough time for it to become comprehensive enough to avert radical climate change. This point of comparison is not sufficient to judge whether the climate process is inferior to the trade process and the analysis will now go on to other comparative points.

3.2 Group Size

Group Size can be though of as an important element in any attempt to mitigate the collective action problem. As this concept's theoretical foundation is rather intuitive, it is the aim of this section to provide an overview of the trade and climate change policy processes in terms of their effectiveness in dealing with the group size issue. This will be done by focusing on two points of analysis. First, the general group size and its implications for the policy processes will be examined. Secondly, an overview of the mechanism intended to keep the benefits of the smaller group available even after the introduction of new members will be provided.

3.2.1 The trade process

The trade process distinguishes itself from other global policy processes in two significant ways. First, it started off including only a few, but well committed nations. Secondly, even after the number of nations started to increase, the group size issue was effectively dealt with by creating subgroups, which allowed for the benefits of discussions among smaller groups to still apply to the policy process at large (Antholis 2008, 122).

It is important to look at the creation of the GATT not as an over-night event. In fact the ”GATT was formed by carving out and implementing the commercial-policy sections of the Havana Charter that was to have guided the ITO” (Irwin 1995, 325). As this process often has been looked upon as a ”blessing in disguise” (ibid.), it allowed the GATT to become an effective general agreement rather than a potentially large bureaucracy.

"The GATT process was managed by the biggest and most technically competent trade players—the so-called Quad of the United States, Japan, Canada, and Europe" (Antholis 2008, 122). This means that rather than just creating a discussion forum, a clear framework was created with the GATT. In the immediate post-war period, two bodies were created to deal with the issue of global trade. This is the UN Conference on Trade and Development (UNCTAD) and the GATT. By clearly dividing the themes of discourse and governance among them, the GATT framework managed to initially create an arena for a few nations and a clear purpose (Antholis 2008, 122).

On the second point, one can say that the analysis poses the question of whether or not the policy process could maintain the benefits of the small group even after new members started to join the policy process. The answer to this, as given by Antholis, is that the lesson of size was constantly relearned as the trade policy process started to include more nations. So-called quads, meaning groups of four, were created to keep discussions from creating only diminishing returns (Antholis 2008, 122f). In effect this allowed the trade policy process to grow in terms of nations included, without falling into the pitfall posed by this.

3.2.2 The climate process

As Antholis points out, the climate change policy process has always suffered from the notion of climate change being a global problem that needs a global solution. Hence the approach of the policy process has, in terms of its extremely large group size, suffered from bad incentives and a problematic decision-making process (2008, 123). Furthermore there has been little action to mitigate these problems by the creation of subgroups and committees, in the way described by Olson (1965, 53).

When looking at the climate process, it is natural that it cannot be seen as a linear process. One of the major breakthroughs however was the creation of the UNFCC in Rio 1992. At this point 178 states were represented, including literally thousands of high-level delegates and 118 heads of state (Hempel 1996, 30f). Hempel argues that, as a result of this very high number of actors, "The summit and the intense preparations that preceded it could be likened to a climbing expedition in which the mountaineers, all linked by a frail rope… spent much of their time arguing about how to finance the climb and about which members were most prepared to lead" (1996, 35).

The second point, being the lack of motivation to create any type of subgroups or committees to effectively deal with the problem of the high number of members, is very well portrayed by the recent breakdown of the climate change policy process in Copenhagen. Even at this important occasion the efforts to organize smaller groups and hence actually achieve anything at the conference, were blocked by a number of developing countries who "claimed that meetings of a smaller group would be undemocratic and illegitimate" (Bodansky 2010, 4f). As the climate change policy process can be though of as chronically suffering from the large group size, one can think of Copenhagen as a result of a long time of

diminishing returns (Falkner, Stephan, and Vogler 2010, 252), meaning that this can bee seen as a problem which always existed but now truly has started to shatter the policy process.

3.2.3 Differences and similarities

When comparing the two policy processes in terms of the group size argument posed by Olson (1965, 53), there is one fundamental difference. As the GATT was created by only 23 nations (Irwin 1995, 325), the international climate change policy progress has exclusively aimed at creating a "global deal" (Falkner, Stephan, and Vogler 2010, 253). Furthermore growth within the system has been administered in different ways. The GATT/WTO has continuously created subgroups and committees to ensure that returns would not drop even after an intensive period of growth. Within the climate change policy process however the UNFCC included a staggering 140 nations already in 2008 (Antholis 2008, 123), only a few years after a decade had passed since its creation. This lays part of the foundation for this essays' argument, being that the international trade policy process managed to achieve better results due to its start as a smaller but better organized and more motivated framework. This argument itself is in line with Olson's reasoning, as he himself portrays the typical participant of too large a meeting as unmotivated and hence unlikely to engage in discussions in a fruitful way (1965, 53).

3.3 Monitoring Mechanisms

Below the monitoring mechanism of the trade policy process and climate change policy process are described, focusing on their ability to create credible and impartial monitoring and thus contributing to the mitigation of the collective action problem.

3.3.1 The Trade Process

The trade policy process started out in 1947 with the creation of GATT, but the idea of increased transparency was not clearly articulated until the Tokyo Round in 1979. Furthermore the first surveillance body was established in 1987, but the more ambitious and well known Trade Policy Review Mechanism (TPRM) was launched first in 1988 after a meeting in Montreal (Price 1991, 228f). This was the start of a country-by-country principle where GATT-members had "agreed to a periodic peer check-up on their protectionist misdeeds" (Price 1991, 229). From this short historic review the most important fact is that the implementation of the TPRM was that it altered monitoring in the way that it changed from "informal

mutual peer monitoring" to an independent review performed by the GATT Secretariat (Price 1991, 228-230).

Thus, monitoring cannot be viewed as one over the whole period. This essay analyses the monitoring process under the TPRM-period arguing that this is the result of a long time during which a low level of transparency and monitoring caused major setbacks to the international trade policy process (Price 1991, 227). Also, the TPRM as can be thought of as the most distinct work in terms of monitoring mechanism created within the framework of the trade process.

The objective of the TPRM is to examine the impact of member's trade policies and practices on the trading system, and to contribute to increased adherence to WTO rules through greater transparency. Country-specific reviews are conducted on a rotational basis; with the frequency of reviews being a function the countries share in the total world trade (Hoekman and Kostecki 2009, 73). The most important fact in terms of the actual design of this monitoring mechanism is however that every time that one country is reviewed, dual reports are drawn up. One is created by the country that is being reviewed, and the other is made under the authority of the GATT secretariat (Price 1991, 230). As Price explains the idea behind this setup, this is "that countries will be more candid in preparing their own reports if they know that the Secretariat, working independently, is covering the same ground" (1991, 230). The most important part of the TPRM is however that the reviews include a meeting at the GATT Council, were frank and critical questions are asked with all other members being in attendance (Price 1991, 230).

The credibility and impartiality of the TPRM can be said to be high. As the review report that is created after each finished review of a country, this actually points out which country has made which comments, letting actors know who thinks what about whom. As a final comment however, there are some flaws in the monitoring mechanisms constituted by the TPRM. In essence these boil down to the fact that the GATT Secretariat is dependent upon the members in its data collection, meaning that a country which can expect criticism is much less likely to provide sufficient data for a independent review performed by the Secretariat (Price 1991, 231).

3.3.2 The Climate Process

As for the international climate change policy process, the same fundamental thinking as for the trade policy process can be applied; it is hard to look at the implemented monitoring mechanisms as a static matter. In this section however the foundation for any arguments will be the results of the Earth Summit in 1992. Here the main achievement was the adoption of the UNFCCC (Hempel 1996, 29-33), starting a new chapter in the climate process. However, as even the UNFCCC holds a multitude of different aspirations and goals, this section will discuss monitoring mechanisms against its "ultimate objective" (Hempel 1996, 33), meaning the stabilization of atmospheric concentrations of GHGs.

Within the UNFCCC the main monitoring mechanism consists of three steps, each designed to complement the previous one. These are, in chronological order, the initial check, the synthesis and assessment and finally the individual review (UNFCCC 2011):

- Initial check: check to see that submitted material by nations is in correct format, and seems to be accurate. (ibid.)
- Synthesis and assessment: "compiles and compares basic inventory information, such as emission trends, activity data and implied emission factors, across Parties and over time" (ibid.).
- Individual review: the most important step, in which "international teams of sectoral inventory experts examine the data, methodologies and procedures used in preparing the national inventory" (ibid.).

This means that the UNFCCC relies on information provided by the countries themselves, which subsequently is scrutinised by so called expert review teams (ERT) that are provided by the UNFCCC itself. As will be explained below, this poses one of the major flaws of the monitoring mechanism employed by the UNFCC, namely that a country, which in fact has behaved against the protocol, has an incentive not to provide accurate information. Another major flaw is that these reviews are mandatory only to Annex 1 countries (UNFCCC 2011), meaning that most developing countries are unaffected by these reviews.

The monitoring mechanisms created within the framework of the international climate change policy process, has often been easy to manipulate in accordance with the individual members intentions (Downs, Rocke, and Barsoom 1996, 395). This in turn makes for one very important fact, namely that states who have little or no interest in correctly monitoring and being monitored can quite easily escape from this. On a more theoretical level this is explained by Downs et al, who argue that, in connection to the monitoring of international fishing, "the crux of the problem was the paradox of collective action" (1996, 395). The meaning of this is that if countries feel that they have violated terms of the UNFCCC, they will not present sufficient information for the review, since they feel that other states might do the same.

Considering the international climate change policy process, another fundamental flaw becomes very clear. For the future, the Copenhagen accord has made some serious commitments considering the level of monitoring, reporting and verification (MRV) (Bodansky 2010 5-9). However, as Bodansky argues, "[t]he Copenhagen Accord is a political rather than a legal document…. It is very brief – only about two and a half pages long – and leaves many details to be filled in later" (2010, 5).

3.3.3 Differences and Similarities

A direct comparison of the approaches to the creation of monitoring mechanisms in the two policy processes is complicated by the asynchronous aspect of this study. However there are a few general ideas, in terms of determining the

credibility and impartibility of the two processes, which will be discussed below. These are: the difference in credibility of the monitoring mechanisms, the general incentive for monitoring and its sources and finally the link to compliance mechanisms.

As the TPRM and the monitoring mechanism employed by the UNFCCC both are based on the idea that countries themselves will give up relevant information in order to perform credible reviews, it is possible to argue that they share the same structural flaw. This means that in both policy processes, the monitoring mechanisms are dependent upon the members' incentive to present correct data. This however, does not have the same result in both of the policy processes due to factors explained below. First of all, the implementation of the TPRM was lead by some of the most advanced trade-nations in the world (Antholis 2008, 122), bringing all of the GATT-members under the same monitoring mechanism. In the case of the UNFCCC, many of the large players actually slowed the process of a functional monitoring mechanism, as Hempel explains referring to the "retarding lead" (1996, 35). This in turn made the incentive-based monitoring mechanism perform better in the case of the TPRM than in the UNFCCC.

3.4 Compliance Mechanisms

3.4.1 The Trade Process

The compliance mechanisms within GATT/WTO are based on retaliatory trade protection imposed by trading partners that have been suffering from the non-compliance of a party to the agreement. The rationale being that the cost of such retaliation shall exceed the short-term gains from non-compliance (Hoekman and Kostecki 2009, 84f). Since international trade law is so complicated judging whether a state is not complying is never unambiguous, and to that end a dispute settlement mechanism exists to decide whether a state is not complying and what retaliatory measures are allowed (ibid.) Since WTO was created after the conclusion of the Uruguay round in 1995 the dispute settlement mechanism (DSM) has become more politically independent with an appellate body consisting of legal experts, much like judges, that has the final say over any ruling (Zangl 2008). Before the WTO the DSM was based on consensus, making it more ineffective since the defendant (i.e. the country that was deemed to be in non-compliance) had a veto over any ruling. Now, under WTO, a consensus is needed not to adopt a ruling by the dispute settlement body or the appellate body (ibid.). If the ruling is not implemented a compliance panel will assemble to decide how a complainant may retaliate, which is also subject to appellate body review (Hoekman and Kostecki 2009, 92f).

The idea of retaliation is not without its problems. A small trading nation may have difficulties making a credible retaliation threat against a large trading nation, which makes the system more based on power politics than a fair and equal judicial system. Moreover, retaliating involves increasing trade protection on

imports from a country, which will cause welfare losses domestically since consumers will have to pay a higher price for the products in question (Hoekman and Kostecki 2009, 115f). However, most disputes do not go as far as to end in retaliatory action. The mere threat of retaliation and the importance of protecting reputation for future negotiations compel countries to implement rulings after they are made or reach a bilateral settlement (Hoekman and Kostecki 2009, 85, 119).

3.4.2 The Climate Process

This section will mainly concentrate on the Kyoto Protocol to the UNFCCC, which is the only legally binding international agreement to reduce GHG emissions. When the Kyoto protocol was first signed it did not include any formal compliance mechanisms but they were later on added to the agreement with the Marrakech Accords from the seventh COP in 2001 (Nentjes and Klaassen 2004; Vogler 2010). The objectives were to "facilitate, promote and enforce compliance" (Nentjes and Klaassen, 531) through (1) restoration in subsequent commitment periods, (2) compliance action plans, (3) suspension of eligibility to sell emission allowances and (4) a commitment period reserve, the most important being restoration in subsequent commitment periods. Practically, it means that commitments that have not been honoured by an Annex 1 party to the Kyoto Protocol is bound to restore this non-compliance in subsequent commitment periods at a rate of 1.3, in effect paying an interest rate (ibid.). This provides an incentive to comply but an illustration of the ineffectiveness of this provision is given by the recent withdrawal from the Kyoto Protocol by Canada, who argued that it would be to costly to restore commitments in the future and thus simply withdrew from the protocol (Simon 2011). Given that withdrawal from the protocol is possible compliance mechanisms within the treaty are not effective as such by raising the cost of non-compliance with the treaty as a whole in a simple cost-benefit analysis. However, other more subtle and informal compliance mechanisms may exist such as protecting the reputation of a party as a credible signatory of legally binding international contracts which does have benefits outside a certain issue area such as climate (Nentjes and Klaassen 2004). It is hard to prove whether this is an important consideration of the parties when deciding to comply or not, and time will tell if the price Canada has to pay for withdrawing will be higher or lower than to have stayed within the protocol and complied.

3.4.3 Differences and Similarities

The WTO process for settling disputes and enforcing compliance is more legalistic than the corresponding mechanisms within the UNFCCC and Kyoto protocol. The parties to the Kyoto Protocol can opt-out from complying by withdrawing from the protocol as illustrated by the recent Canada example. That is somewhat analogous to the veto that parties had in GATT (pre-1995) to any ruling by the dispute settlement body. It is important to keep in mind that

GATT/WTO is a more mature example of global governance than UNFCCC and that it took 47 years for it to reach the current state. It is, moreover, not clear that a more legalistic and compulsory mechanism would be good for the climate regime since it may compel countries not to sign it in the first place if it would involve giving up sovereignty by allowing foreigners to punish transgressors. It is also hard to see how punishments could be made within the climate framework, if retaliation would be for complying states to emit more GHGs to retaliate against non-complying states it would defeat the purpose of a climate regime and only lead to very long-term costs for a non-complying state.

Antholis, in that spirit, argues for a general agreement on climate change that will be adjudicated not by a large international organisation but by reciprocal monitoring that can build trust and compel the parties to comply not because the punishments are high but because they want to protect their reputation (2008, 125f).

3.5 Lessons Learned

Falkner, Stephan and Vogler propose that the climate process ought to adopt a 'building blocks' approach rather than a 'grand bargain' (2010, 252). This is along the lines of analysis explored in this essay. The climate process may prove to be more effective if it was transformed as to involve major emitters forming a smaller negotiating forum than the current one able to sort out contentious issues in a more constructive way than the current UNFCCC negotiations, following from the theoretical and empirical lines of inquiry regarding group size in this essay. If a basis for agreement could be achieved this could be a platform for iterated negotiations with an emerging cooperative norm leading up to an effective climate change mitigation regime with effective monitoring allowing for good compliance.

However, with the current deadlock among major emitters it may take time for action to be taken if nothing drastic happens. Provided that the first commitments are rather small it will take time for this process to achieve considerable effects, as it did with the trade process that took almost 50 years to evolve into the current trade regime encompassing many aspects of trade. For this approach to be faster trust has to emerge quickly, as it is the basis of all cooperation.

4 Conclusion

This study set out to (1) identify if mitigation of climate change and achieving increased trade among nations can be considered to be similar collective action problems, (2) compare the policy processes with respect to effectiveness in solving the collective action problem and (3) to identify what lessons from the trade process can be applied on the climate process.

Regarding the first point, it has been established that both processes can be viewed as forms of the Prisoner's Dilemma, which is a classic collective action problem that can be analysed through game theory. Subsequently four points of comparison was identified using existing collective action theory on which the comparative study was based. These points are essential to solving the Prisoner's Dilemma as they all act to increase the level of trust, which is a necessary condition for cooperation.

The second and most important goal of the essay is to compare the processes on these four points. This comparison illustrates differences and similarities between the two processes with regards to iteration of games, group size, monitoring and compliance. First, it is shown that both processes encompass a distinct element of iterated games but that the trade process has been more successful in linking issues and reaching a basis for a positive tit-for-tat spiral. Secondly, it is demonstrated theoretically and empirically that group size plays an important role and that the large number of actors in the current UNFCCC negotiating forum acts as an impediment to cooperation. Thirdly, it was determined that the current monitoring mechanism within the trade process is more effective even though there historically has been problems before the creation of the TPRM, in comparison to the climate process that has not yet established an effective monitoring regime, especially for non-Annex 1 countries. Fourthly, it was indicated that the compliance mechanisms within the trade regime are more effective as to induce compliance than the corresponding mechanisms in the UNFCCC, that have not induced compliance, illustrated by the example of the non-complying country Canada that simply withdrew from the protocol in order to avoid compliance costs.

The third objective of the essay is to provide some lessons or guidelines for the future development of the climate process. The trade process is shown to be more successful than the climate process as of today. It is, somewhat counter-intuitively, suggested that an approach that is less comprehensive in the beginning may be more successful in achieving a more comprehensive climate change mitigation regime in the long run. This lesson is modelled from the trade process as a whole, which began with the breakdown of the comprehensive effort to establish ITO after the Second World War but finally achieved all its goals through successively adding building blocks.

It is worth remembering that these conclusions and lessons are based on a small comparative study that has not taken into account the different power structures in the world during the cold war era, in which most of the trade regime was negotiated, and the post-Soviet era in which the climate regime has been negotiated. This means that the findings are not necessarily robust and that other ways of analysing the problems of achieving climate change mitigation with respect to this important omitted variable has to be explored. Moreover the methodology of comparison of only two cases is not a very strong ground for generalisations. The findings of this study may be applied to other international collective action problems but they may not be particularly useful.

Despite these limitations it is still evident that the policy processes are different, and given that both the climate process and the trade process are supposed to address the same collective action problem, the lessons are not to be ignored. Climate change is one of the main global governance challenges of the 21st century and a building blocks approach, which was adopted in the trade process, ought to be examined more closely as a means to achieve effective cooperation to mitigate climate change.

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