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## THESIS APPROVAL

The abstract and thesis of Renato Corbetta for the Master of Science in Political Science were presented July 7, 1998, and accepted by the thesis committee and the department.

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## ABSTRACT

An abstract of the thesis of Renato Corbetta for the Master of Science in Political Science presented July 7, 1998.

Title: The Impact of Relative Gains on Interstate Cooperation in the Areas of Security and International Economy.

In the last twenty years, the issue of the impact of relative gains on interstate cooperation has been at the center of the debate between the two major schools of thought in International Relations theory, namely neoliberalism and neorealism. Over time, the relative gains problem has ceased to be a radically divisive issue and has worked as a common research program that has brought the two theoretical perspectives closer together. Both neoliberals and neorealists have set aside major questions regarding the origins of the relative gains problem and of states' preferences, and they have focused on the problem of determining the impact of relative gains in specific issue-areas. The result of this shift of focus has been that relative gains no longer represent an independent variable that may help to explain the phenomenon of international collaboration but an additional dependent variable to be explained by the strategic characteristics of particular issue-areas.

This paper argues that the recent attention to issue-areas is partially misdirected in that it overlooks the main research question -why states are concerned with relative

gains and why this affects international cooperation. The analysis of the influence of relative gains on cooperation among states in the realms of security and international economy shows that states are concerned with relative gains not only across, but also above issue-areas. This occurs because states are multipurposed actors which are interested in both welfare and security, and which value their standing vis-a-vis other states because their relative position determines whether they can achieve the aforementioned goals. Regardless of the nature of the objectives they pursue, it is the competitive orientation with which states interact in the international system that makes relative gains important. From this systemic perspective, it is then possible to conclude that relative gains have an impact on interstate collaboration because they affect states' positionality, and to predict that such an impact will be greater when states' positionality is immediately at stake.

**THE IMPACT OF RELATIVE GAINS ON INTERSTATE COOPERATION  
IN THE AREAS OF SECURITY AND INTERNATIONAL ECONOMY**

by

**RENATO CORBETTA**

**A thesis submitted in partial fulfillment of the  
requirements for the degree of**

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in  
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**Portland State University  
1998**

## TABLE OF CONTENTS

List of Tables .....	p.ii
List of Figures .....	p.iii
 <b>Chapter I</b>	
Introduction: Cooperation and Conflict in International Relations Theory. The Past and Current Debate .....	p.1
 <b>Chapter II</b>	
Cooperation, Game Theory, and Relative Gains .....	p.27
 <b>Chapter III</b>	
Security, Relative Gains, and Cooperation .....	p.69
 <b>Chapter IV</b>	
Relative Gains in the Economic Area .....	p.110
 <b>Chapter V</b>	
Conclusion: Positionality, States' Objectives, and the Importance of Relative Gains .....	p.148
 Reference List .....	p.167

## LIST OF TABLES

**Table 1-III****Probabilities of perceptions of cooperation or defection****under imperfect information ..... p.89**

## LIST OF FIGURES

<b>Figure 1-II</b>	
Prisoners' Dilemma .....	p.66
<b>Figure 2-II</b>	
Prisoners' Dilemma with Ordinal-Value Payoffs .....	p.66
<b>Figure 3-II</b>	
Amended Prisoners' Dilemma and Deadlock .....	p.67
<b>Figure 4-II</b>	
Games of Harmony, Assurance, Coordination, and Chicken .....	p.68



## **CHAPTER I**

### **INTRODUCTION: COOPERATION AND CONFLICT IN INTERNATIONAL RELATIONS THEORY. THE PAST AND CURRENT DEBATE.**

In the past two decades the problem of interstate cooperation has occupied a large part of the debate between the two dominant theoretical perspectives in International Relations, namely neoliberalism and neorealism. Within the debate about international collaboration, the issue of relative gains has commanded the greatest attention from both neoliberals and neorealists. Relative gains, paradoxically, divide neoliberals from neorealists and, at the same time, draw them together.

Both neoliberals and neorealists agree that the problem of relative gains has an impact on the possibility of international cooperation. Yet, they sharply disagree on the extent to which relative gains influence the behavior of states. On the one hand, neoliberals argue that states are most concerned with their welfare and are mainly seekers of absolute gains. According to neoliberals, relative gains have a limited impact on international cooperation and matter only in the area of security. Neorealists, on the other hand, believe that survival is the principal goal of states, and that nations are concerned with relative gains in all issue-areas because almost all gains are convertible into military and political advantages. As a result, authors of both perspectives have recently come to focus on the problem of establishing the extent to which relative gains matter in different issue-areas.

This common focus of research has fostered a theoretical rapprochement

between neoliberalism and neorealism. Because they concentrate on the same subject and employ the same methods of analysis, the differences between neoliberals and neorealists have become increasingly blurred over time, so much that it is quite often difficult to understand where exponents of both schools stand in relation to their theoretical background. Nonetheless, in spite of this theoretical convergence, neoliberals and neorealists have not yet resolved their greater issues of contention, that is, issues concerning the correctness of their respective assumptions about states' preferences and on the impact of systemic forces on states' behavior.

The danger inherent in the rapprochement between neoliberalism and neorealism around the issue of relative gains is that the original -and yet to be answered- research questions are being subsumed by excessive attention to the topic of issue-areas. Why do states care about relative gains? And how does this affect the prospects for interstate cooperation? The narrow focus on the theme of issue-areas tends to divert our attention away from these basic questions and from the problem of dealing with states' intentions and their origins. Rather than independent variables that may help to explain the problem of international cooperation, relative gains have become another dependent variable that can be explained by looking at the characteristics of the specific strategic context in which states interact. What is lost in the richness of details of this approach is the possibility that states' concerns with relative gains may not be fully determined by the contextual features of a given issue-area. They may, instead, originate in the anarchical nature of the international system,

which forces states to worry about their relative standing vis-a-vis real or potential competitors. Omitting the hypothesis that the origin of states' concerns with relative gains may transcend the contextual characteristics of specific issue-areas hinders the possibility of arriving at a general systemic theory about relative gains and cooperation.

This paper argues that states tend to behave as positional actors independently of the area of interaction and their objectives. States are multipurposed actors which pursue prosperity and security at the same time. Yet, because wealth and power are perceived as relative assets, states care about their relative position in the international system in regard to both goals. Because relative gains and losses may alter a state's position in the system, they may facilitate or prevent the achievement of any goal that a country has set for itself. Where states stand in relation to each other matters for what they can or cannot achieve. Relative gains or losses may expand or narrow the range of choices available to states, which are then likely to be sensitive to them regardless of the area in which they interact. Thus, relative gains considerations influence the prospects for international cooperation not only across but also above issue-areas. Issue-areas are useful as analytical tools insofar as they help us to establish that states care about relative gains independently of the strategic context, and that relative gains have an impact on interstate cooperation. Rather than the answer, issue-areas are part of the research question about relative gains and cooperation. The confusion between the two may simply stir the debate into another direction and lead to the avoidance of the main theoretical problem.

## The past and current debate

The issue concerning the extent to which conflict or cooperation characterize the relations among states has been the main focus of scholarly attention since the birth of International Relations as an independent discipline of study in the early 1920s. The two theoretical perspectives that have dominated the study of International Relations since its inception, realism and liberalism, have always been in sharp disagreement in regard to this issue. The emphasis that realism and liberalism have placed, respectively, on the existence of discord in the international arena and on the possibility for nations to attain collaboration has been, until recently, an unbridgeable divide between two theoretical views that have grown progressively closer to each other over the last few decades.

The early “conflict versus cooperation” debate, which pitted the liberal-idealist faith in the goodness of human nature and in progress against the realist notion of power as an end in itself, was supplanted in the post-World War II era by a much less normative debate revolving around contrasting “third images.”<sup>1</sup> The different views held by realism and liberalism in regard to international conflict and cooperation in the

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<sup>1</sup>For an overview of the early liberalism-realism debate, see Martin Hollis and Steve Smith, *Explaining and Understanding International Relations* (Oxford, UK: Clarendon Press, 1990), especially pp.16-28; and Arnold Wolfers, *Discord and Collaboration*, (Baltimore: John Hopkins Press, 1962), chap.6. The distinction among first, second, and third images, respectively referring to images of individuals, states, and the international system, was originally introduced by Kenneth N. Waltz in *Man, the State, and War* (New York: Columbia University Press, 1959).

post-war period were rooted in their almost diametrically opposed images of the international system. Even though modern liberals and modern realists shared the assumption that the international system is anarchical in nature, that is, it lacks any form of centralized authority, they held contrasting views regarding the influence that international anarchy exercises on the motivations and behavior of states. Such contrasting views led exponents of the two schools of thought to opposite, and sometimes unreconcilable, theoretical conclusions.

According to modern realists, who have been generally labeled neorealists, anarchy constitutes the ordering principle of the international system. The absence of centralized authority makes sovereign states equal to each other. In the words of Kenneth Waltz, "none is entitled to command; none is required to obey."<sup>2</sup> Because no central authority can enforce peace and prevent aggression, insecurity and lack of trust are omnipresent. Such a system is described as a "self-help" system in which each state can rely only on itself for its own survival.<sup>3</sup> As a prerequisite for the achievement of other objectives, survival is taken to be the primary goal of states.<sup>4</sup> Because every state is an enemy and a potential aggressor, security is each actor's principal concern, and power is the key ingredient for gaining security.

In the view of modern realists, power, measured in capabilities, no longer

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<sup>2</sup>See Kenneth N. Waltz, *Theory of International Politics* (New York: McGraw-Hill, 1979), p.88.

<sup>3</sup>See Waltz, *Theory of International Politics*, p.91.

<sup>4</sup>Ibid., pp.91-92.

represents an end in itself, but it rather is a means for states to guarantee their own survival. Capabilities are unequally distributed across the international spectrum. Even though states are alike in that they are sovereign entities, they differ from each other in the amount of capabilities they possess. More powerful states, that is, states endowed with a greater share of capabilities, are better able to fulfill their objectives. Being more powerful, they are also more secure than weaker states.<sup>5</sup> Less powerful units feel, in turn, threatened by stronger nations, and they strive to improve their security by redressing the existing gaps in power with greater actors. Neorealists have borrowed the notion of balance of power from classical realism, and they have identified two major ways in which nations engage in this behavior. States engage in “internal balancing,” by which they try to compensate for differences in power by internal means, and in “external balancing,” by which a state joins its power with that of another state so as to offset the advantage of a stronger opponent.<sup>6</sup> According to neorealists, balance-of-power behavior is the effect of international anarchy and, at the same time, the main cause behind the continuous reproduction of anarchy in the international system.<sup>7</sup>

The neorealist assumption about the connection between power and security gives rise to a peculiar view of the interactive dynamics among international actors,

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<sup>5</sup>Ibid., pp.96-97.

<sup>6</sup>Ibid., chap.6 and especially p.118.

<sup>7</sup>Ibid., pp.119-120.

which has been labeled “security dilemma.” The security dilemma is generated by the fact that greater security achieved by one state means less security for another state.<sup>8</sup> States compete in trying to offset the power differentials among them through the acquisition of more capabilities, thus fostering each other’s insecurity. In the words of Waltz, “the means of security for one state are, in their very existence, the means by which other states are threatened.”<sup>9</sup> Thus, states are trapped in the security dilemma not because of their behavior, but because of the relative nature of power itself, the importance of which is determined by international anarchy. It follows that, under the influence of systemic anarchy and of the security dilemma, relations among states are inherently competitive, and they can be only so.

The realist vision of the international system is often equated to a Hobbesian state of nature dominated by constant competition, struggle, and conflict, and pervaded by an overwhelming lack of trust.<sup>10</sup> States are extremely wary of not only of each other’s power, but also of each other’s intentions. They live under the assumption that “today’s friend may be tomorrow’s enemy in war.”<sup>11</sup> The use of force and aggression are possibilities that actors concerned with security must always contemplate. Some

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<sup>8</sup>See Robert Jervis, “Cooperation Under the Security Dilemma,” *World Politics*, Vol.30, No.2 (1978), pp.169-170.

<sup>9</sup>See Waltz, *Theory of International Politics*, p.64.

<sup>10</sup>See Arthur A. Stein, *Why Nations Cooperate* (Ithaca, NY: Cornell University Press, 1990), p.6.

<sup>11</sup>See Joseph M. Grieco, *Cooperation Among Nations*, (Ithaca, NY: Cornell University Press, 1990), p.29.

realists even reach the extreme conclusion that aggression is a viable choice for achieving greater gains and expanding a state's security, and some go as far as to postulate that nations do not only balance against power but also against intentions, or perceived threats.<sup>12</sup>

Not surprisingly, modern realists hold a very skeptical view of the possibility of international cooperation. Because of the omnipresent likelihood of conflict and of the generalized lack of trust, cooperation among states is a rare occurrence. Because there is no central authority to enforce promises, states fear that they will be cheated in cooperative agreements. Moreover, because they are also concerned with differences in the distribution capabilities, states are also extremely preoccupied with the possibility that their partners will benefit more from cooperation, thus becoming an even stronger threat.<sup>13</sup> Because under the security dilemma gains or losses in capabilities by one state mean gains or losses in security by another state, what emerges is a positional picture of the international system in which nations greatly care about maintaining their power status vis-a-vis other states.<sup>14</sup> According to realists, cooperation among states is more

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<sup>12</sup>A thorough overview of states' motivations for aggression and of states' tendency to balance against other states' intentions is provided by Stephen M. Walt, "Alliance formation and the balance of world power," in *The Perils of Anarchy*, M. Brown, S. Lynn-Jones, and S. Miller, eds. (Cambridge, Mass.: MIT Press, 1995), pp.208-248.

<sup>13</sup>See John J. Mearsheimer, "The false promise of international institutions," in *The Perils of Anarchy*, M. Brown, S. Lynn-Jones, and S. Miller, eds. (Cambridge, Mass.: MIT Press, 1995), p.339.

<sup>14</sup>See Waltz, *Theory of International Politics*, p.126; also Grieco, *Cooperation Among Nations*, pp.39-40.



likely to occur in the presence of a common threat, and even when it occurs, interstate cooperation is likely to be “fleeting and temporary.”<sup>15</sup>

By contrast, the image of the international system held by liberal scholars leaves much greater room for cooperation among states than that held by neorealists. Modern liberals -often referred to as liberal institutionalists or neoliberals- emphasize that the international arena, in spite of its lack of a centralized authority, is characterized by broad and visible patterns of cooperation among nations. In the neoliberal view, anarchy does not prevent the development of regularity and order in the system. Rather than the distribution of power, the principal feature of the international anarchical arena is the interdependence that exists among its parts.<sup>16</sup> Interdependence leads states to interact and cooperate with each other, and such a cooperation is more widespread than realists assume, as it is suggested by the existence of “extensive patterns of international agreement that we observe on issues as diverse as trade, financial relations, health, telecommunications, and environmental protection.”<sup>17</sup> Such patterns of cooperation would not exist, neoliberals argue, if international anarchy were the Hobbesian state of nature described by realists.

Neoliberals also claim that motivations different from those postulated by

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<sup>15</sup>See Stein, *Why Nations Cooperate*, pp.6-7.

<sup>16</sup>The neoliberal view on the concept of interdependence is thoroughly outlined in Robert O. Keohane and Joseph S. Nye, *Power and Interdependence* (Boston: Little-Brown, 1977), chap.2.

<sup>17</sup>See Robert O Keohane, *After Hegemony: Cooperation and Discord in the World Political Economy* (Princeton, NJ: Princeton University Press, 1984), p.7.

neorealists determine the behavior of states. According to neoliberals, anarchy and self-help are not necessarily conducive to an overwhelming concern with survival and security and to the interaction dynamics motivated by the necessity for self-help. Indeed, states' motives are only in part generated by systemic influences. Rather than with security and power, states are concerned with their economic welfare.<sup>18</sup> In an anarchical system, states are self-interested, rational actors, but they rationally act so as to maximize their welfare. Rather than toward conflict, rationality and self-interest move states toward cooperation and help to generate the regularity and order that are observable in world politics. Regularity and order are epitomized in and reinforced by the extensive array of rules and norms to which states resort in their ongoing interactions. Norms of specific and diffuse reciprocity are deemed to be especially important to this end.<sup>19</sup>

In addition, neoliberals claim that states can and do overcome the effects of international anarchy by establishing institutions and regimes which embody and strengthen the pre-existing patterns of norms and rules of interaction. Unlike early idealists, who stressed the normative value of international institutions, neoliberals believe that those arrangements are generated by the actors' self-interest and often reflect the distribution of power in the system. Nonetheless, international institutions and regimes perform a variety of functions that strengthen international order and

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<sup>18</sup>See Stein, *Why Nations Cooperate*, p.7

<sup>19</sup>See Robert O. Keohane, "Reciprocity in international relations," *International Organization*, Vol.40, No.1 (1986), pp.1-27, and especially p.5.

facilitate cooperation. Most prominently, institutions and regimes formalize rules and norms of interaction, reduce the transaction costs of bargaining, facilitate the arrangement of side-payments, reduce uncertainty by providing information, promote compliance by making monitoring easier, foster the creation of compartmentalized issue-areas and the “nesting” of specific sub-issues into those issue-areas, and constitute stable fora for the settlement of disputes.<sup>20</sup> In addition, neoliberals do not rule out the possibility that international institutions and regimes may, in the long run, change the character of the actors’ preferences and induce states to genuinely identify their interests with those of other states.<sup>21</sup>

In summary, even though neoliberals and neorealists share the notion that the international system is anarchical in character and that states are the principal actors in it, they hold two quite conflicting third-images. As seen above, the issue of international cooperation is one of the major points that has kept the two perspectives apart from each other. Whereas, in fact, neorealists consider interstate cooperation as an occasional occurrence -almost an anomaly- neoliberals have built their theoretical design around the notion that international collaboration is not only a possibility but also is a main feature of the system. Yet, even though the issue of international cooperation has arguably constituted the major dividing line between neorealism and neoliberalism, it has been around this theme that the schools of thought have

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<sup>20</sup>For a detailed overview of the functions performed by institutions and regimes, see Keohane, *After Hegemony*, chap.6.

<sup>21</sup>See Keohane, *After Hegemony*, chap.7 and especially pp.120-132.

progressively grown closer to each other over the past two decades.

### **Neorealism, neoliberalism, and relative gains**

The recent rapprochement between neorealism and neoliberalism has been spurred by a series of works of neoliberal inspiration, published in the early 1980s, that posed a direct challenge to the dominance of realism in general and to its view of international cooperation in particular. Even though this group of works provoked an intensification of the theoretical dispute at the time of their publication, the early heated quarrel evolved into a much milder debate centering on matters of degrees rather than on the original -and arguably more substantive- issues. That is, within a short time, the neoliberal/neorealist debate moved from its original “conflict versus cooperation” form to the question of how much conflict and how much cooperation characterize the international arena.

The neoliberal challenge of the early 1980s came from the claim, made by the authors of this body of literature, that the assumptions of the anarchical nature of the system and of states as rational, egoistic, and unitary actors did not necessarily lead to the conclusions drawn by realist writers.<sup>22</sup> As it will be seen in the following chapter, the most significant among these works employed a strict game theoretical methodology and often presented extensive experimental evidence suggesting that

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<sup>22</sup>See Joseph M. Grieco, “Anarchy and the limits of cooperation: A realist critique of the newest liberal institutionalism,” *International Organization*, Vol.42, No.3 (1988), p.486.

cooperation could develop and be maintained in a world populated by self-interested actors and without central authority.<sup>23</sup> The implications of these findings for International Relations theory were enormous, in that they questioned the theoretical soundness of realism in general and of neorealism in particular.

The neorealist response to the challenge brought forth by neoliberal institutionalism was immediate and was centered on the argument that the new neoliberal analysis was founded upon a misinterpretation of the concept of anarchy and of the goals of states. According to neorealist authors, the neoliberal interpretation of international anarchy as the lack of a centralized authority in charge of enforcing promises is simplistic at best. Neoliberals overlook the realist tenet that, precisely because the system is anarchical, the possibility that states resort to violence is always present. The enforcement of promises in cooperative agreements, which is the main concern of neoliberals, is just a secondary issue for neorealism. Because neoliberals misinterpret the very meaning of international anarchy, they are also incorrect in drawing assumptions about the goals of states. Whereas, in fact, neorealists postulate that survival, and therefore security, is a state's fundamental objective, neoliberals assume that economic welfare is the main goal for nations. The newest neoliberal

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<sup>23</sup>See in particular Robert Axelrod, *The Evolution of Cooperation* (New York: Basic Books, 1984); Robert Axelrod, "The emergence of cooperation among egoists," *American Political Science Review*, Vol.75, No.2 (1981), pp.306-318; Robert Axelrod and Robert O. Keohane, "Achieving cooperation under anarchy: Strategies and institutions," *World Politics*, Vol.38, No.1 (1985), pp.226-254; Kenneth Oye, "Explaining cooperation under anarchy: Hypothesis and strategies," *World Politics*, Vol.38, No.1 (1985), pp.1-24.

attack -neorealists concluded- did not represent a real challenge because, in spite of their claim, neoliberal theorists did not share the same assumptions of realism.<sup>24</sup>

At the center of the neorealist reply to the neoliberal challenge of the 1980s was the issue of relative gains, an issue that draws together the debate about the meaning of international anarchy and the dispute about assumptions of states' goals. The core argument in the neorealist response was that the interpretation of anarchy as absence of centralized authority and of welfare as the main goal of states leads to a misspecification of the concept of rational egoism (or self-interest) and to an incorrect evaluation of the actual behavior of international actors. When, in fact, economic prosperity is taken to be a state's main objective, the logical expectation is that actors will try to maximize the benefits they can derive from cooperation, and that they will try to establish enduring patterns of collaboration with others. Under the neoliberal interpretation of egoism, actors seek the highest payoff they can achieve from cooperation in the attempt to improve their own individual lot. According to neorealists, the amount of international cooperation to be expected under these assumptions exceeds what actually occurs in reality. Because the possibility that actors will resort to violence is always present, each state is not only concerned with the maximization of its own benefits, but it is also concerned with the gains achieved by

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<sup>24</sup>See Grieco, *Cooperation Among Nations*, especially chap.1; *ibid.*, "Anarchy and the limits of cooperation," pp.488-499; *ibid.*, "Realist theory and the problem of international cooperation: Analysis with an amended Prisoner's Dilemma model," *Journal of Politics*, Vol.50, No.3 (1988), pp.600-606; see also Joanne Gowa, "Anarchy, egoism, and third images: *The Evolution of Cooperation* and international relations," *International Organization*, Vol.40, No.1 (1986), pp.167-186.

other states. Each state fears that a partner who achieves greater benefits in a cooperative arrangement, thus becoming comparatively more powerful, will take advantage of this gap and resort to the use of force. Because power is relative in nature, and because states are mainly concerned with their security -the neorealist argument runs- they pay more attention to their relative position vis-a-vis other states than to their absolute welfare. As Joseph Grieco suggests, neoliberals postulate that states are atomistic actors, whereas neorealists find that states are positional in character, that is, they care where they stand in the system in relation to other states.<sup>25</sup> Thus, neorealists claim that when there is the possibility that a state position in the system will be altered by a skewed distribution of benefits in a cooperative agreement, states will reject the opportunity to cooperate. As Waltz puts it, “when faced with the possibility of cooperation for mutual gain, states that feel insecure must ask how the gain will be divided. They are compelled to ask not ‘Will both of us gain?’ but ‘Who will gain more?’”<sup>26</sup> In the terminology commonly used in the debate, neoliberals see states as exclusively interested in absolute gains, while neorealists insist that nations are mainly concerned with relative gains.

Determining whether states are more interested in absolute or relative gains is of utmost importance for it influences the character of the broader general theories of international cooperation to which it is possible to arrive. If states are mainly

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<sup>25</sup>See Grieco, “Anarchy and the limits of cooperation,” p.487.

<sup>26</sup>See Waltz, *Theory of International Politics*, p.105.

concerned with absolute gains, cooperation becomes an attainable goal even in the absence of a central authority, and it is to be seen as a normal phenomenon in international relations. As just seen, the idea that relative gains are more important and that states are positional in character can be traced to Kenneth Waltz's seminal formulation of neorealist theory, and it leads to the view that cooperation is a rare occurrence in international politics and can be achieved only under exceptional circumstances, that is, when the costs of being cheated are low and when the distribution of cooperative benefits is perfectly symmetrical.<sup>27</sup>

It is of fundamental importance to restate that debate about absolute and relative gains of the last 20 years has never been formulated in "either/or" terms. Beyond the first exchanges concerning the correctness of general assumptions about the character of the international system, the goals of states, and the notion of egoism, there has been, throughout the 1980s, a progressive convergence between the neoliberal and the neorealist positions. The two schools of thought have come to a general agreement concerning the definition of international cooperation.<sup>28</sup> Equally important, they have reached a common understanding that the theoretical question to be investigated is not whether states are concerned with either absolute or relative gains, but whether states are *more* concerned with relative gains than with absolute gains, or viceversa. By the late part of the decade, both neoliberals and neorealists

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<sup>27</sup>Ibid., p.106.

<sup>28</sup>See Helen Milner, "International theories of cooperation among nations," *World Politics*, Vol.44, No.3 (1992), p.467.



have come to share the notion that states are seekers of both types of gains. Yet, the remaining disagreement concerns the extent to which states are preoccupied with either type of benefits.

On this issue, the neoliberal argument has taken the following shape.

Neoliberals currently accept the neorealist claim that the possibility of resorting to violence is a main feature of the international system, but they assume that such a possibility is not constant across the international spectrum.<sup>29</sup> Not in all areas of international interaction is a state's survival threatened, and not all occasions for cooperation have potential repercussions on a state's security. Thus, states are concerned with both absolute and relative gains, but their concerns are neither fixed nor unchangeable. Where security is the main issue, states will be more concerned with relative gains, and cooperation will be more difficult, although not impossible. Where security is not at stake, states will be guided by their desire of maximizing their absolute gains, and cooperation will be the norm, rather than the exception. The area of international economy and trade is taken by neoliberals as the epitome of the feasibility of interstate collaboration.<sup>30</sup> Therefore, the neoliberal argument rests on a clear distinction among issue-areas in international politics, and the internal features of a specific issue-area are assumed to drive states concerns with either relative or absolute

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<sup>29</sup>See Keohane, *After Hegemony*, pp.7-8.

<sup>30</sup>The prototypical neoliberal argument on the distinction between the security area and the area of economy and on the prospects for cooperation in both areas can be seen in Charles Lipson, "International cooperation in economic and security affairs," *World Politics*, Vol.37. No.1 (1984), pp.1-23.

gains.<sup>31</sup>

On the contrary, the neorealist argument stresses the fact that almost all benefits deriving from interstate cooperation can be turned into security advantages, and in particular economic gains. Because wealth is one of the many measures of national power, and because it can be converted into military power, states will be wary of the possibility of being defected upon and on the possibility of achieving asymmetric gains not only in the security area, but also in the realm of international economy.<sup>32</sup> In addition, the prospects for international cooperation are complicated by the fact that military power is fungible, and its weight can be brought to bear in areas other than security. Because military power is fungible, and because economic power is convertible, neorealists find that the distinction among issue-areas is somewhat useful, but it must not be overemphasized. Relative gains matter all across the spectrum of interstate interactions because security concerns permeate the entirety of international politics. Instances in which relative gains concerns can be eschewed and cooperation is achievable do exist, but they are rare and limited to those few issues in which survival is not at stake.

The dispute concerning the relation between relative gains and issue-areas has become intertwined with the long-standing debate about the nature and the role of power in international politics, with neorealists emphasizing the importance of

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<sup>31</sup>For a definition of the concept of issue-area in international relations, see Keohane, *After Hegemony*, p.61.

<sup>32</sup>See Grieco, *Cooperation Among Nations*, pp.39-40.

convertibility of power resources and neoliberals downplaying the issue of fungibility.

Yet, even on this topic, we have witnessed a convergence of the two schools of thought in recent years, as neorealists have come to recognize that not all economic benefits are convertible and neoliberals have accepted the fact that power-relations and the threat of violence can influence the outcome of cooperative bargaining. Indeed, much of the current work on relative gains, power, and issue-areas from both the neoliberal and the neorealist camp is concerned with identifying specific instances within specific issue-areas in which problems of convertibility and fungibility influence relative gains concerns and, in turn, make cooperation more or less attainable.

This analytical focus goes hand in hand with the great attention that both neoliberals and neorealists have recently devoted to the analysis of all those system-wide factors that may have repercussions on the weight that states attribute to relative gains. One major line of investigation is concerned with how the number of actors involved in a cooperative agreement influences the impact of relative gains. Here neoliberals argue that relative gains concerns are dampened when the number of participants is small, whereas neorealists sustain that relative gains concerns are more diffused when a larger number of parties is involved. A second object of analysis involves the impact of power-relations among states on relative gains preoccupations. The question being debated is whether power asymmetries facilitate cooperation or foster relative gains concerns by reinforcing asymmetrical returns of benefits from collaboration. A third issue often considered in the relative gains literature is the extent

to which the presence of international institutions and regimes “softens” the problem of relative gains. This issue is almost exclusively a concern of neoliberal authors, and it is matched by a fourth and final issue -mainly an interest of neorealists- which deals with the influence that patterns of amity, especially alliances, and enmity have on the attention that states pay to relative gains.

To summarize, the early “relative gains versus absolute gains” dispute that pitted optimistic neoliberals against pessimistic neorealists has evolved in recent years into a milder debate in which the dividing line between the two theoretical perspectives has become increasingly blurred. Both schools of thought now agree on the definition of anarchy and on the possibility of the use of violence in international politics. They have come to the common understanding that relative gains are, in general, important to states, but that their influence on international cooperation is not uniform. They share the notion that the impact of relative gains on interstate cooperation varies across issue-areas and are now interested in identifying specific instances within issue-areas in which relative gains are more or less influential.<sup>33</sup> Finally, both neoliberalism and neorealism are interested in investigating the role played by systemic factors on nations’ preoccupations with relative gains. All of these issues are yet to be settled, but once again it is possible to observe a convergence between the two perspectives.<sup>34</sup>

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<sup>33</sup>See Robert Powell, “Anarchy in international relations theory: The neorealist-neoliberal debate,” *International Organization*, Vol.48, No.2 (1994), pp.314 and 329-330.

<sup>34</sup>See Milner, “International theories of cooperation among nations,” p.470.

### **Toward a situational theory of relative gains ?**

In the past 20 years the issue of international cooperation, which originally constituted an incommensurable barrier between classical realism and early idealism, has become the focal point around which neorealism and neoliberalism have progressively come closer to each other. Indeed, the problem of relative gains and interstate collaboration has worked as common research program for the two dominant theoretical perspectives and has fostered what Ole Waever has termed as the “neo-neo synthesis.”<sup>35</sup> The debate over absolute and relative gains has become, rather than a new dividing line between the two paradigms, the playing field in which the rapprochement between liberalism and realism has been carried out. As, again, Waever has put it in scathing words,

We agree on 90 percent and the remainder is essentially an empirical question. The proportions of how much state action is driven by relative and how much is driven by absolute gains and under what conditions, that is a researchable matter wonderfully suited for the rationalist, neo-neo research programme. And actually this has become a cottage industry for the most mathematical modellers in the discipline.....Most important is, however, to notice that the absolute/relative gains debate is not just any debate, but a very well structured debate among participants who have been striving to set up a joint framework.<sup>36</sup>

Waever's irony is not misplaced. Neoliberalism and neorealism have in recent times moved beyond the methodological issue of “second images versus third images”

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<sup>35</sup>See Ole Waever, “The rise and fall of the inter-paradigm debate,” in *International Theory: Positivism and Beyond*, Steve Smith, Ken Booth, and Marysia Zalewsky, eds. (Cambridge, UK: Cambridge University Press, 1996), p.163.

<sup>36</sup>See Waever, “The rise and fall of the inter-paradigm debate,” pp.166-167.

and of “reductionist theories versus systemic theories.”<sup>37</sup> The issue of relative and absolute gains has been framed in a strictly systemic perspective and analyzed under commonly shared premises regarding the meaning of international anarchy, of rationality and egoism of actors, and of the notion of cooperation. The irony lies in fact that, as neorealism and neoliberalism have come closer to each other, the possibility of reaching a comprehensive, overarching theory of relative and absolute gains has become increasingly more remote. Indeed, the issue has been narrowed to the problem of specifying individual instances in which relative gains are important and determining how much relative gains matter in those instances.<sup>38</sup>

This evolution toward a situational theory of relative gains, or better toward many situational theories, is probably inescapable, since so much effort has been devoted to the analysis of international cooperation and our insight on this issue is probably greater than our knowledge in any other area of international relations. Yet, the danger inherent in excessive specificity is that of ending up with an infinite number of case studies on international cooperation and without a theory on the influence of relative gains on international cooperation. The risk is that of getting to know exactly when and how much relative gains matter in the relations between two specific actors but of losing sight of why they matter. For any theory to have at least some

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<sup>37</sup>For an overview of the controversy surrounding the pros and cons of systemic approaches as opposed to reductionist approaches, see Waltz, *Theory of International Politics*, especially chap.4.

<sup>38</sup>See John C. Matthews, “Current gains and future outcomes,” *International Security*, Vol.21, No.1 (1996), pp.116-117.

explanatory and predictive power, some measure of parsimony is required.<sup>39</sup> To be sure, because the range of interactions among states in international politics is so vast, some degree of specification cannot be avoided. Yet, this tendency does not need to be overdrawn.

What is here suggested is that the distinction among issue-areas still represents a useful analytical framework for investigating the relative gains issue not because it shows that relative gains concerns are situation-specific, but because it indicates that relative gains matter all across the horizon of interstate relations. The theoretical argument herein proposed is that the neorealist notion that states are positional actors is fundamentally correct, but the notion of positionality is to be extended beyond the area of security. States' concerns with relative gains do not depend on whether we assume security or economic welfare to be their primary goal. Even economic prosperity can be considered a relative asset, as states can gain or lose shares in particular markets, as they can establish monopolies or become dependent on other states in particular sectors of production, and as they move to a higher or lower ranking position in particular trade sectors. As Rosencrance has argued, patterns of trade offer states ways to transform their positions through economic growth rather than through military conquest.<sup>40</sup> Wealth is one of the main dimensions of power and, as such, it can be just as relative as security.

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<sup>39</sup>See Waltz, *Theory of International Politics*, especially chap.4.

<sup>40</sup>Cited in Joseph S. Nye, "Neorealism and neoliberalism," *World Politics*, Vol.40, No.2 (1988), p.240.

What it is also argued is that the distinction between the area of security and that of economy is not to be exaggerated. The two sectors are so deeply intertwined that it is often too difficult to point out clear-cut differences in the way states interact in the two realms. Security calculations are affected by gains or losses in the economic area, while prospects for economic cooperation are influenced by power relations. Opportunities to cooperate in the economic area may be turned down because they will affect the existing distribution of power. Yet, asymmetric distributions of power and patterns of alliances may favor the achievement of economic cooperation. Cooperation is often achieved in the face of security relative gains concerns, while it often fails when survival is not at stake. Neither does all cooperation occur in the economic area, nor is all conflict limited to the security realm. Relative gains concerns are more visible in the security sector because of the greater speed with which they can be turned into irreversible advantages, but to be too dogmatic in the distinction may be theoretically counterproductive. Relative gains matter across issue-areas because states tend to adopt a similar positional posture in different sectors, and they matter to a greater extent when there is the possibility that they will be *immediately* converted into de facto advantages.<sup>41</sup> States seem to care comparatively more about gains in the security realm not necessarily because they are more concerned about security, but because

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<sup>41</sup>The same argument has recently been made by John Matthews, who argues that relative gains matter across issue-areas because of their cumulative effects. That is, the relative gains problem is particularly acute when relative gains have immediate consequences on future positionality and outcomes. When there is no immediate impact, states may afford to overlook relative gains and concern themselves with absolute gains. See Matthews, "Current gains and future outcomes," especially pp.121-125.



those gains are more likely to be quickly transformed into substantial, and often irreversible, advantages. When the same conditions appear in the area of international economy, states are likely to manifest the same preoccupation with asymmetries in the distribution of benefits from cooperation.

This is, of course, not to say that states value relative gains as an end in itself. The argument being made draws, instead, on Arnold Wolfers's view that states are multipurposed, self-interested, rational actors who do not single-mindedly pursue a unique objective.<sup>42</sup> States have a variety of goals. They are interested in both security and economic welfare, and they try to pursue both goals simultaneously as much as possible. When the achievement of their objectives is undermined by asymmetric distributions of benefits, then relative gains will matter. And they will matter even more when they can be turned into tangible advantages in a short period of time.

There is no pretentious attempt being made here to settle the relative gains debate once and for all. Neither will I try to establish the superiority of a theoretical approach over the other. Both neorealism and neoliberalism are correct in some of their conclusions and are imprecise in others. Much, and arguably everything, has been said on the topic of relative gains. No original theory is here provided. There is only a re-elaboration of some of the many arguments that have been put forth in the 20 years of debate between neorealism and neoliberalism. Thus, to summarize, this paper has three main objectives. First, it provides a detailed overview of the neoliberal and

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<sup>42</sup>See Wolfers, *Discord and Collaboration*, chap.6, and especially pp.91-97.

neorealist arguments on the issue of relative gains and interstate cooperation as they have been suggested and have evolved in the past two decades. Second, it critically analyzes differences and similarities in the ways in which relative gains concerns affect cooperation among nations in the security and in the economic area. Finally, moving from the assumptions that states are multipurposed actors who consider both security and wealth to be relative and interrelated goals and act positionally regardless of the area of interaction, this paper offers the argument that relative gains considerations affect the prospects for interstate cooperation not only across, but also above issue-areas.

## CHAPTER II

### COOPERATION, GAME THEORY, AND RELATIVE GAINS

Assumptions concerning the origins of states' concerns with relative gains are of fundamental importance for determining the amount of conflict and collaboration that any theory of interstate cooperation will predict. The assumption that states are multipurposed actors which act positionally regardless of the goal they are pursuing - that is, the assumption developed in this paper- is likely to lead us to predict more cooperation than that usually anticipated by neorealists and to expect more conflict than generally envisioned by neoliberals. The neorealists' and neoliberals' focus, respectively, on security and welfare as the only source of states' interests may have, in fact, led theorists of both perspectives to overestimate the extent to which either collaboration and discord occur in the international arena. However, it is important to underscore that the correctness of general assumptions about the sources of states' preoccupation with relative gains can be debated and tested only if there is common agreement on the meaning of cooperation as an international phenomenon. As will be seen, a great merit of the early neoliberal/neorealist debate about relative gains has indeed been that of generating a common understanding of the meaning of interstate cooperation. Arguably, the consequence of the more recent tendency to focus on issue-areas rather than on states' intentions has been the diversion of both neorealists' and neoliberals' attention away from the testing of the main assumptions of their

respective theories. In this sense, it seems fair to claim that the advantages of having reached a commonly shared definition of interstate cooperation have not been fully exploited.

Determining what constitutes cooperation in international politics has always proved to be an extremely difficult enterprise for theorists of international relations. When can two states be said to be cooperating with each other? Does cooperation depend on the motives of the actors, on the outcome of their actions, or on their strategic behavior in the pursuit of some outcome? Is it cooperation only when they integrate their policies in the pursuit of a common objective? Or do we also witness cooperation when actors act jointly so that they can achieve their separate self-interests? What if a common goal is achieved without reciprocal consultation and common action? And what sort of international actors does cooperation involve? Is it cooperation only when enemies are involved? Or can we say that agreements among friend and allies represent instances of cooperation as well?

Attempting to define international cooperation is such a daunting task that it leaves endless room for disagreement. The tendency of many International Relations scholars to dwell on elaborate analyses of interstate cooperation without actually providing any definition of the object of their studies may represent an additional source of theoretical discord. The notion of cooperation may sound so familiar and immediate that many have taken it for granted. It is not to be excluded that many of the controversies in the postwar realists/liberals debate were rooted in incompatible

definitions of the phenomenon of cooperation or in the lack of such a definition. The realist emphasis on “high politics,” security, and harmony of interests arising from the presence of common external threats was at odds with the liberal attention toward “low politics,” economics, and subnational actors.<sup>1</sup> Different analytical focuses, leading to different conceptualizations of what constitutes cooperation, generated contrasting conclusions about the amount and the modes of cooperative behavior that could be found in international politics. Thus, it is not a case that the recent rapprochement between neoliberalism and neorealism has begun with the achievement of a commonly shared definition of cooperation.

It is possible, in fact, to see in both the neoliberal and neorealist literature of the 1980s and 1990s a convergence toward a unique and unifying notion of international cooperation. As neorealists progressively moved away from the idea that only balance-of-power dynamics can lead to cooperation, i.e. alliances, so did neoliberals become acquainted with the notion that self-interest and egoism may be conducive to collaborative behavior. The common concept of cooperation that has emerged involves two necessary conditions. First, in order to lead to cooperation, the interaction among two or more states must be a “mixed-interests” situation, that is, a situation entailing a tension between the desire of following a narrowly egoistic course of action and the knowledge that a suboptimal outcome will ensue if all the participating actors do the same. Second, each state involved in the interaction must take into consideration the

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<sup>1</sup>See Wolfers, *Discord and Collaboration*, pp.27-28; also Grieco, “Anarchy and the limits of cooperation,” pp.488-489.

possible actions of the other actors and adjust its policies accordingly. That is to say, we cannot talk of cooperation if the best outcome for all of the participants is reached without any policy adjustment on everybody's part.<sup>2</sup>

Thus, according to the commonly agreed upon definition, "cooperation occurs when actors adjust their behavior to the actual or anticipated preferences of others, through a process of policy coordination."<sup>3</sup> Cooperation emerges from situations involving a mixture of conflict (among the individual actors' self-interests) and the need for overcoming that conflict. Situations in which states' interests are in harmony do not classify as cooperation. As Keohane puts it,

Cooperation therefore does not imply an absence of conflict. On the contrary, it is typically mixed with conflict and reflects partially successful efforts to overcome conflict, real or potential. Cooperation takes place only in situations in which actors perceive that their policies are actually or potentially in conflict, not where there is harmony. Cooperation should not be viewed as the absence of conflict, but rather as a reaction to conflict or potential conflict. Without the specter of conflict, there is no need to cooperate.<sup>4</sup>

Cooperation in the international realm involves, therefore, a combination of self-interest and contingency, a mixture of conflicting and complementary interests. It is in the actors' self-interest both to achieve the outcome that is most favorable to them individually and to eschew that same outcome so that a collectively unfavorable outcome is avoided. Each state experiences a dissonance between its narrow,

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<sup>2</sup>Among neorealist authors see, for instance, Grieco, "Anarchy and the limits of cooperation," p.493; among neoliberals, see Keohane, *After Hegemony*, pp.51-53.

<sup>3</sup>See Keohane, *After Hegemony*, p.51.

<sup>4</sup>*Ibid.*, pp.53-54.

“myopic” self-interest, and its long-term, strategic self-interest. How this internal conflict is resolved determines which strategy of interaction each actor will employ. Contingency arises from the necessity to evaluate the preferences of other states and behave accordingly. Contingency forces states to act according to some form of strategic rationality, that is, a rationality “which incorporates the realization that pursuit of egoistic interest requires consideration of interactions of one state’s choices with other states’ choices.”<sup>5</sup> If no contingent choice is required, and there is no internal strain between the two aforementioned types of self-interest, that is, the situation is one of pure conflict or pure harmony, cooperation cannot be said to occur.<sup>6</sup>

Arthur Stein has provided a useful classification of the mixed-interests situations that covers the spectrum between harmony and conflict. Stein has divided those instances into “dilemmas of common interests” and “dilemmas of common aversion.” The former arise when independent decision-making leads to outcomes that are Pareto-deficient, that is, “outcomes in which all actors prefer another given outcome to the equilibrium outcome.”<sup>7</sup> In these instances, the actors involved have a common interest in achieving a precise outcome. The latter exist when actors are, instead, interested in avoiding a particular outcome, i.e., when actors “do not most

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<sup>5</sup>See Duncan Snidal, “The game theory of international politics,” *World Politics*, Vol.38, No.1 (1985), p.39.

<sup>6</sup>See Axelrod and Keohane, “Achieving cooperation under anarchy,” p.226.

<sup>7</sup>See Arthur Stein, “Coordination and collaboration: Regimes in an anarchic world,” *International Organization*, Vol.36, No.2 (1982), p.304.

prefer the same outcome but do agree that there is at least one outcome they all want to avoid.”<sup>8</sup> Both dilemmas of common interests and dilemmas of common aversion contain conflict of self-interest and necessity of policy contingency. The difference lies in the fact that in instances of the first kind the actors need to design a common strategy that each needs to follow if the desired outcome is to be achieved, while in instances of the second type the actors may follow independent and different strategies, as long as they do not interact so as to produce the undesired result. Both dilemmas of common interests and of common aversion require policy adjustment, which makes this distinction consistent with the definition of cooperation seen above, but they differ in the degree of policy adjustment required. Thus, such a categorization allows Stein to decompose the broad notion of cooperation into situations requiring collaboration (dilemmas of common interests) and situations requiring coordination (dilemmas of common aversion), with collaboration being more difficult to obtain, in that it implies that each actor must significantly diverge from its myopic self-interest.<sup>9</sup>

Indeed, cooperation in the international system, as commonly defined by neoliberals and neorealists, does not appear dissimilar from the notion of cooperation usually applied to domestic contexts and actors operating at a subnational level. In the words of Duncan Snidal, “the problem of international cooperation is essentially one of

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<sup>8</sup>See Stein, “Coordination and collaboration,” p.309.

<sup>9</sup>Ibid., pp.304-311.



collective action applied to the particular circumstances of the international system.”<sup>10</sup>

The “particular circumstances” to which Snidal is referring consist in the fact that the international system, unlike any domestic system, is anarchical in nature. There is no central authority that may resolve the problems of conflicting self-interests and of contingent action for the actors involved. States are free to pursue their myopic self-interest without fearing that a central power will punish them and force them, by using violence if necessary, to follow a course of action that is best for everybody. At the international level the problem of collective action is, therefore, amplified by the anarchical nature of the system and, because of this, states most of the times choose their narrow self-interest, reaching unfavorable outcomes that leave everybody worse off.

The particular intensity of the problem of cooperation under conditions of anarchy has been usually modeled by both neoliberal and neorealist authors as a game of Prisoners’ Dilemma (PD). In the Prisoners’ Dilemma, two prisoners, who have been separated and cannot communicate, face the problem of whether to cooperate with each other and not confess the crime they have committed, or to defect on the accomplice and confess. If prisoner 1 confesses (defects D), and prisoner 2 does not (cooperates C), the former goes free, while the latter is given a long jail term. If they both refuse to confess, that is, they both cooperate (CC), they will both receive a very

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<sup>10</sup>See Duncan Snidal, “Coordination versus Prisoners’ Dilemma: Implication for international cooperation and regimes,” *American Political Science Review*, Vol. 79, No.4 (1985), p.943.

mild sentence. However, if they both defect and confess (DD), they both face a substantive jail term but not quite as long as that received for unilateral cooperation. Thus, as it is possible to see in Figure 1-II, there are four possible outcomes to the dilemma.

Each prisoner ranks the possible outcomes as follows:  $DC > CC > DD > CD$ .<sup>11</sup>

The dilemma arises because each prisoner has a preferential, or dominant, strategy (unilateral defection) which may provide his most desired outcome, but he also knows that, if the other prisoner behaves in the same fashion, they will both get to an outcome that is only the third-best (DD). Because the two prisoners are assumed to be rational, egoistic actors, and because they cannot communicate and do not trust each other, they both follow their dominant strategy of defection and end up actually receiving the payoff associated with a DD outcome. A DD outcome represents a Pareto-deficient outcome in that it leaves both actors aggrieved. If ordinal-value preferences are associated with each outcome, the Prisoners' Dilemma assumes the format shown in Figure 2-II at the end of the present chapter.

The Prisoners' Dilemma epitomizes the problem of cooperation under conditions of anarchy because it embodies both the conflict of self-interests and the

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<sup>11</sup>The payoffs associated with the outcomes of a PD are usually indicated as: temptation T (a DC outcome); reward R (a CC outcome); punishment P (a DD payoff); and "sucker" S (a CD payoff). Thus, each prisoner's ranking of the payoffs is  $T > R > P > S$ . In order to have a Prisoners' Dilemma, the payoff associated with mutual cooperation must be greater than the average of the temptation and the sucker's payoffs, that is,  $R > T + S/2$ . This assumption is necessary to the definition of a PD because, otherwise, the prisoners would be able to escape the dilemma by taking turns at exploiting each other. See Axelrod, *The Evolution of Cooperation*, p. 10.

difficulty of making individual policies contingent on other actors' choices. The paradox inherent in a PD is similar to that found in the international system under conditions of anarchy, that is, the paradox that self-interest and egoistic rationality produce an outcome that is suboptimal. Furthermore, even if cooperation (CC) is achieved in a situation of Prisoners' Dilemma, such an outcome is not stable. Since there is always an outcome (DC) that both players prefer to mutual cooperation, CC does not represent an equilibrium outcome.

Because of its useful properties, the Prisoners' Dilemma has been the starting point for an impressive number of theoretical speculations about both the limits of cooperation in anarchical settings and the possibilities of overcoming such limitations.<sup>12</sup> And, as Waever has argued, the widespread use of Prisoners' Dilemma and other game theoretical models by authors of the neoliberal and neorealist schools has laid the foundations for the development of a common research program that has accelerated the "neo-neo synthesis" of the 1980s.<sup>13</sup>

### ***The Evolution of Cooperation***

As mentioned in chapter I, the convergence between neorealism and

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<sup>12</sup>It is not the purpose of this paper to evaluate the general advantages and the limitations of the use of game theory for the study of international politics. For an outstanding overview of this issue, see Snidal, "The game theory of international politics," especially pp.36-44. See also Robert Jervis, "Realism, game theory, and cooperation," *World Politics*, Vol.40, No.2 (1988), pp.317-349.

<sup>13</sup>See Waever, "The rise and fall of the inter-paradigm debate," pp.166-167.

neoliberalism of the last two decades was spurred by a series of works by neoliberal authors which challenged neorealist theories concerning the impossibility of cooperation under conditions of anarchy. *The Evolution of Cooperation* by Robert Axelrod was the most significant contribution to this body of literature.<sup>14</sup> Axelrod's book seemed to deliver an irreparable blow to neorealism because: 1) even though it moved from the same theoretical assumptions of neorealism, i.e., an anarchical environment populated by egoistic actors, it demonstrated that cooperation could be nonetheless achieved; 2) it offered substantive and sound experimental evidence to support its main theoretical conclusions.

Axelrod's findings were derived from the results of two computer tournaments for Prisoners' Dilemma strategies which involved respectively 15 and 63 participants.<sup>15</sup> In the tournaments each strategy competed against all other strategies in an indefinite number of 2-player games, without knowing which interaction would be the last one. Each game had a 0.00346 probability of being the last one. Strategies had no mechanisms for making enforceable threats or commitments, which is equivalent to say that no central authority was present. They also had no means for changing the payoffs which had been previously established as 5 points for Temptation T, 3 points for Reward R, 1 point for Punishment P, and 0 points for the Sucker's payoff S. The

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<sup>14</sup>See Robert Axelrod, *The Evolution of Cooperation* (New York: Basic Books, 1984).

<sup>15</sup>For details concerning the organization of the PD tournaments, the participants, and characteristics of the strategies submitted, see Axelrod, *The Evolution of Cooperation*, especially Appendix A.

cumulative scores of each player were counted at the end of the tournament. Players could not be eliminated from the game and had to move simultaneously.<sup>16</sup> The rules of the tournaments were, in short, so designed as to recreate an anarchical setting resembling as much as possible the characteristics of the international system.<sup>17</sup>

The results obtained by Axelrod were quite surprising. Both PD tournaments were won by the same strategy, TIT FOR TAT (TFT) submitted by Anatol Rapoport, which was the most simple of all the participating strategies and was a “nice” strategy, that is, a strategy that never defects first. The salient feature of TFT is that it starts out with a cooperation and then repeats whichever move the opponent has played in the previous interaction, thus reciprocating cooperation and retaliating against defection.<sup>18</sup> Yet, in spite of its “irrationality” -TFT cooperates first in a game that is dominated by the logic of defection- and of its simplicity, TFT achieved the highest cumulative score in both instances, faring better than “mean” and other extremely complex strategies. This occurred in spite of the fact that TFT cannot score more than the opponent in any individual game. Because it can, and often is, “suckered” on the first move, TFT can at best tie the opponent’s score.<sup>19</sup> Nonetheless, TFT dominated both tournaments when final scores were computed.

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<sup>16</sup>Ibid., pp.11-12.

<sup>17</sup>Ibid., chap.1, and especially pp.3-4.

<sup>18</sup>Ibid., p.13.

<sup>19</sup>Ibid., p.112.

The analysis of the tournaments' results led Axelrod to the identification of a set of variables that not only could explain the reasons of TFT's victory but also raised great expectations about the possibility of the emergence of cooperation in an anarchical environment. Some of these variables depend on the context in which the interaction among players takes place. Others are, instead, related to the peculiar features of TFT. The possibility of iteration and the discount parameter are the most significant contextual variables isolated by Axelrod. The possibility of iteration, that is, the possibility of repeatedly playing several rounds of PD, radically changes the logic of defection that dominates the single-shot game. Iteration induces the players to take into consideration at any given interaction the possible outcomes of future rounds of the game. If PD can be played repeatedly, and there is the probability that the players will face each other again, cooperation rather than defection becomes the most rational choice because it allows both players to accumulate larger payoffs in the long run. Axelrod has labeled this effect "shadow of the future."<sup>20</sup>

There are two prerequisites for the "shadow of the future" to weigh significantly on the players' choices. First, the "shadow of the future" must be sufficiently long. Second, the players must not know which interaction will be the last. If, in fact, the players perceive that the game will be played only a limited number of times, the "shadow of the future" will not extend to a significant degree on their current choices. Thus, the players will not place sufficient value on future outcomes and will

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<sup>20</sup>Ibid., p. 12.

not see the utility of establishing a long-term cooperative pattern with the opponent. In such a case, they will choose defection over cooperation. Even worse, if they know which encounter will be the last, a regressive spiral will be generated which will extend backwards to the initial interaction. Such a problem has been called the “end-game problem.”<sup>21</sup>

A second variable fundamental for the emergence of cooperation was labeled by Axelrod discount parameter  $w$ . Because rational players do not value uncertain future payoffs as much as current payoffs, they tend to discount long-term results. The discount parameter  $w$  tells us how much players discount future payoffs and how much the cumulative value of a sequence of payoffs would be.<sup>22</sup> The value of the discount parameter adopted by players strictly depends on the cardinal values of the games’ payoffs, and it is in a relation of reciprocal dependence with the first variable described above, i.e., the length of the “shadow of the future.” As Axelrod discovered from his analysis of the tournaments’ results, if the “shadow of the future” is sufficiently long

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<sup>21</sup>The logic of the end-game problem is that both players, knowing which interaction is the last one, will defect on that interaction in the attempt to get a T score. But because player 1 can predict that player 2 will defect in the last round, it will attempt a defection in the next-to-last interaction. Player 2 will do the same, and another P score will be achieved. This dynamic proceeds in reverse until it extends to the very first round. The result is that, when players 1 and 2 know which round is the last, they will accumulate a series of P payoffs, instead of establishing a steady pattern of cooperation. See *ibid.*, pp.92-93.

<sup>22</sup>Supposing, for instance, that  $w = 1/2$ , the cumulative value of string of mutual defections, each with a payoff of 1, will be  $1 + 1/2 + 1/4 + 1/8 \dots$  which would sum exactly to 2. Axelrod also adds that “a very useful fact is that the sum of this infinite series for any  $w$  greater than zero and less than one is simply  $1/(1 - w)$ .” See *ibid.*, p.13.

and the discount parameter sufficiently large, that is, the players attribute a substantial value to long-term payoffs, “there is no best strategy independent of the strategy used by the other player.”<sup>23</sup> This is almost equivalent to say that, under these circumstances, a dominant strategy of defection does not pay off in the long run. A contingent strategy, such as TFT, which reciprocates cooperation and retaliates against defection, provides the best results.

The contextual variables so far described help, in part, to explain why cooperation may emerge in an anarchical setting. In short, when the possibility of iteration is substantial, and when future payoffs are sufficiently valued, players realize that: 1) short-term gains from defection bring little benefit when compared to long-term cumulative payoffs; and 2) non-contingent strategies based on defection are counterproductive in the long run. Yet, in order to have a full explanation of TFT’s success and of the general emergence of cooperation in Axelrod’s tournaments, we also need to look into TFT’s intrinsic characteristics and into the population of players.

TIT FOR TAT has three peculiarities that help to explain its success: it is nice, contingent, and “forgiving.” By being nice, i.e., by cooperating on the first move, TFT can establish a pattern of cooperation with other nice strategies from the first interaction, and this leads to overall large payoffs for both players.<sup>24</sup> Because it is contingent, TFT always reciprocates cooperation and never lets a defection go

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<sup>23</sup>Ibid., p.15.

<sup>24</sup>Ibid., p.33.



unpunished. Because it retaliates against defection, TFT cannot be easily exploited by other strategies. This behavior can also be easily identified by other players, and it indirectly communicates to others that the best course of action is to reciprocate TFT's cooperation.<sup>25</sup> In this way, TFT can "bend" clever strategies -strategies that occasionally defect- into its pattern of cooperation.<sup>26</sup> Finally, because it is forgiving, TFT does not endlessly retaliate after the first defection, but it is always ready to return to cooperation if the other player does the same. In both tournaments, forgiveness set a clear difference between nice, contingent strategies and mean, unforgiving strategies, which tended to remain trapped in a spiral of defections when they played against each other.<sup>27</sup> In summary, because of these three characteristics, TFT performs best when it encounters other nice strategies and does well with the more flexible among the clever strategies. In Axelrod's tournaments, in fact, mean, clever strategies managed to occasionally exploit some nice strategies but performed poorly against each other. TFT, on the other hand, did not lend itself to excessive exploitation and managed to cumulate to the highest final score mainly by cooperating with other nice strategies.

Axelrod's further manipulations of the tournaments' results also led to some unexpected conclusions. Computerized repetitions of the tournaments showed that,

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<sup>25</sup>Ibid., p.33-34.

<sup>26</sup>Arguably, the major limitation of TFT is that of generating an "echo effect" of defections when it encounters clever strategies that are also retaliatory. See *ibid.*, pp. 37-38.

<sup>27</sup>Ibid., p.36.

after several “generations,” TFT is able to invade the existing population of exploitative, mean strategies and marginalize them so as to achieve “collective stability.”<sup>28</sup> Axelrod identified two preconditions for this phenomenon to occur. First, the value of the discount parameter  $w$  must be sufficiently large, that is, the “shadow of the future” must substantially extend over the present.<sup>29</sup> Second, if cooperative strategies are to invade the population of exploitative strategies, they must arrive in a cluster, even a small one, and they must behave according to the rule of reciprocity. This is to say that the invading strategies must be similar to TFT, i.e., retaliatory and forgiving.<sup>30</sup> By cooperating among themselves, the invading nice strategies fare better than the exploitative strategies, which on the contrary tend to erode the same environment in which they thrive.<sup>31</sup> If these preconditions occur, within several generations, patterns of cooperation based on the rule of reciprocity will expand and become collectively stable within a population dominated by nice, retaliatory, and

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<sup>28</sup>A strategy is defined as being collectively stable if no strategy can invade it. In the context of Prisoners’ Dilemma, ALL D (all defection) is always the collectively stable strategy, because it cannot be invaded by any other strategy, if the “newcomer” arrives in isolation. See *ibid.*, pp.56 and 63.

<sup>29</sup>*Ibid.*, pp.58-59.

<sup>30</sup>*Ibid.*, pp.63-67.

<sup>31</sup>This occurs because exploitative strategies thrive on nice, non-retaliatory strategies, which tend to disappear after a few generations. The invading cluster of nice strategies, on the other hand, will not be exploitable if its members practice the rule of reciprocity. See *ibid.*, pp.55-57.

forgiving strategies.<sup>32</sup>

The findings contained in *The Evolution of Cooperation* were both provocative and revolutionary. If, given certain premises, cooperation could indeed establish itself in an anarchical environment populated by selfish actors, the possibility existed that realist theories about the impossibility for states to collaborate in the international system were unsound. Axelrod himself devoted an entire chapter of his book to measures that “reformers” could take in order to promote cooperation.<sup>33</sup> *The Evolution of Cooperation* elicited as much enthusiasm in the neoliberal camp as it drew sharp criticisms from neorealists. Whereas for neoliberals the rule of reciprocity inherent in TIT FOR TAT became the cure against all evils, neorealists competed among themselves in finding invalid correspondences between Axelrod’s model and the actual international system. Even though many of the issues raised by *The Evolution of Cooperation* are still unsettled, Axelrod’s work had the unquestionable merit of narrowing the debate about international cooperation around a few essential themes, thus fostering the convergence, or at least the dialogue, between neorealism and neoliberalism.

### **The neoliberal argument: Reciprocity, iteration, and issue-areas**

The notion that the fear of being cheated in an agreement is the greatest

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<sup>32</sup>For the detailed explanation of the prerequisites for and modes of the evolution of stable patterns of cooperation among nice, retaliatory strategies, see *ibid.*, chap.3.

<sup>33</sup>*Ibid.*, chap.7.

obstacle to the stabilization of cooperation in the international realm had been part of the neoliberal thought for quite some time. The possibility, opened up by *The Evolution of Cooperation*, that the problem of the ubiquitousness of defection in international politics could be overcome through the collective practice of the rule of reciprocity has induced neoliberals to try to identify all those instances in which reciprocity is more easily attainable, and to isolate those variables that may contribute to the success of such a behavior. Through the use of Prisoners' Dilemma as the principal analogy for the conditions states face in the international realm, neoliberals seem to have principally focused on the structure of the payoffs in a PD game, on the factors that facilitate the monitoring of actors' behavior and the sanctioning of defections, and on the characteristics of specific issue-areas that may make iteration and reciprocity more or less successful.

It is a defining characteristic of Prisoners' Dilemma that the benefits deriving from unilateral defection are greater than those arising from mutual cooperation. Because, a rational actor always tries to maximize his gains, unilateral defection is the dominant strategy in a PD. The temptation to defect on the other player may, however, be reduced by manipulating the payoff structure in the PD game. The rules in Axelrod's tournaments did not allow for this sort of manipulations. Yet, because such rules do not hold in the international system, neoliberals assert that states can employ different means in order to reduce the temptation to defect. Neoliberals focus in particular on the difference between DC and CD payoffs and on the difference between

CC and DD payoffs. A small DC - CD reduces the gains from unilateral defection and diminishes the fear of being “suckered.” A large CC - DD makes benefits to be received from cooperation appear larger.<sup>34</sup> In addition, a limited DC - CC difference decreases the incentives for unilateral defection and fosters cooperative behavior between players.<sup>35</sup> In summary, small differences in the cardinal values of the payoff structure dampen the “severity” of the Prisoners’ Dilemma, and when PD is less intense cooperation is more easily attainable. Thus, neoliberals identify several different strategies that can alter the payoff structure of a PD, and such strategies can be unilateral, bilateral (issue linkages which combine dissimilar games), and multilateral (centering on the formation of international regimes).<sup>36</sup>

More promising than altering the payoff structure of PD is the use of the norm of reciprocity, as shown in *The Evolution of Cooperation*. In line with Axelrod’s argument, neoliberals stress that the effectiveness of reciprocity depends on the possibility of iteration, and they add that iteration is a constant feature of the international system, since states interact with each other on a regular basis and in different areas. The larger the possibility of iteration, the greater the likelihood for

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<sup>34</sup>See Oye, “Explaining cooperation under anarchy,” p.9.

<sup>35</sup>See Lipson, “International cooperation in economic and security affairs,” p.8; see also John Conybeare, “Trade wars: A comparative study of Anglo-Hanse, Franco-Italian, and Hawley-Smoot conflicts,” *World Politics*, Vol.38, No.1 (1985), p.148.

<sup>36</sup>See Oye, “Explaining cooperation under anarchy,” pp.9-11.

states to successfully employ the norm of reciprocity.<sup>37</sup> Where the “shadow of the future” is large, states may resort to TIT FOR TAT or similar strategies without the fear of receiving an irrecoverable loss if they are “suckered” and with the possibility of receiving greater benefits at a later stage. Moreover, if the “shadow of the future” is sufficiently long, a strategy of “specific” reciprocity, which starts out on strictly bilateral basis and is grounded in the principles of contingency and equivalence, may evolve at a later stage into “diffuse” reciprocity, which can involve several actors, and which does not need to be based on equivalence and contingency.<sup>38</sup> Iteration and successful reciprocity can, in the long run, affect not only the objective attributes of a situation, but also the expectations of the actors, so that the problem of international cooperation will cease to resemble a situation of Prisoners’ Dilemma but will approximate the conditions of either Harmony or Assurance games.<sup>39</sup>

In addition to iteration, the efficacy of reciprocity is affected by several contextual variables influencing the ability of actors to identify defectors, their ability to effectively retaliate, and their long-term incentives to punish cheaters.<sup>40</sup> According to neoliberals, the number of players involved is the most important among these factors. Because in international relations the definition of cooperation and defection can be

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<sup>37</sup>See Axelrod and Keohane, “Achieving cooperation under anarchy,” p.232.

<sup>38</sup>See Keohane, “Reciprocity in international relations,” pp.5-8 and 22-23.

<sup>39</sup>See Axelrod and Keohane, “Achieving cooperation under anarchy,” p.234.

<sup>40</sup>*Ibid.*, p.235.

ambiguous, distinguishing between the two behaviors becomes easier if only a few actors take part in the interaction. With a small number of players the identification of cheaters is easier, and the task of monitoring the participants' actions is facilitated. A small number of actors also makes the task of gathering the necessary support for the collective punishment of defectors more manageable.<sup>41</sup> With few actors involved there is more openness and transparency. Transaction and information costs decrease. Reputations are more easily established, and norms solidify more rapidly. The possibility of encountering the same actors grows considerably, and most states are likely to employ the same discount rate.<sup>42</sup> Finally, when only a few players interact, manipulations of the payoff structure in ways that are conducive to cooperation is facilitated. Defection can be prevented and collaboration encouraged, for instance, by appeasing dissatisfied actors with side-payments or by reining them in with the creation of issue-linkages.<sup>43</sup>

Finally, it is the neoliberals' opinion that cooperation may emerge more easily in those issue-areas where the practice of reciprocity has substantial chances of success. Specifically, neoliberals draw a clear distinction between the area of security and the area of international political economy (IPE). In the area of security, the payoff structure is more severe because the consequences of unreciprocated cooperation (a

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<sup>41</sup>See Oye, "Explaining cooperation under anarchy," pp.14-16; also Conybeare, "Trade wars," p.151.

<sup>42</sup>Ibid., pp.19-20.

<sup>43</sup>See Axelrod and Keohane, "Achieving cooperation under anarchy," pp.236-241.

CD outcome) may be disastrous for players. Because the possibility of conflict is always present, and because players may be eliminated from the game, iteration is less likely to occur. The “shadow of the future” is quite short, and actors tend to apply reduced discount parameters. Because of the lack of information typical of this area, it is difficult to distinguish between defection and cooperation, and this makes the monitoring task arduous. Defectors cannot be easily identified, and even when they are singled out, retaliation is likely to be extremely costly and often ineffective. The reverse of these conditions exists in the area of political economy. Here, the Prisoners’ Dilemma is less severe. Iteration is not only a possibility but a reality. Being “suckered” is not quite as disastrous as in the area of security, and retaliation is likely to be more effective. Because these conditions favor the successful employment of the norm of reciprocity, cooperation is not only more likely to emerge in the first place, but it is also more likely to spread. In addition, actors may take advantage of the stable patterns of cooperation achieved in the economic area to establish linkages with other issue-areas, linkages that may favor the spread of cooperation.<sup>44</sup>

To summarize, at the core of the recent neoliberal argument of the problem of international cooperation is the belief that the variables identified in *The Evolution of Cooperation* may help to overcome the lack of trust that dominates the international political system. Iteration, the “shadow of the future,” and the norm of reciprocity may

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<sup>44</sup>On the neoliberal distinction between the area of security and the area of political economy, see Lipson, “International cooperation in economic and security affairs,” pp.12-18; see also Axelrod and Keohane, “Achieving cooperation under anarchy,” pp.231-232.



induce states to cooperate with each other in spite of the anarchical nature of the international arena. Moreover, these variables have a strong explanatory power in regard to the actual behavior of nations. Their application to specific issue-areas allows international relations analysts to delineate, explain, and predict systemic patterns of cooperation.

### **The neorealist response: Positionality and relative gains**

Since the publication of *The Evolution of Cooperation*, neorealists have strongly rejected the idea that the “new” neoliberal argument about cooperation undermines the theoretical foundations of realism. According to neorealists, Axelrod’s works and the subsequent neoliberal theories are based on several misinterpretations of the key theoretical assumptions of neorealism. The neoliberals’ reading of the notions of international anarchy and of egoism is radically different from that of neorealists in that neoliberals underestimate states’ concerns with security and with their relative position in the system. As a consequence, these misinterpretations about the behavior of states and the workings of the international system lead neoliberals to employ incorrect models of the problem of international cooperation -models that clearly overestimate the amount of cooperation that can be achieved in international politics.

The sharpest criticism coming from the neorealist camp is that the neoliberal view that the lack of centralized authority is the main problem of international anarchy is incomplete. For neorealists, the problem of international cooperation is not simply

that there is no a superior authority that could enforce promises and punish defectors. The real consequence of international anarchy is that states can freely resort to violence and that the possibility of the use of force is always present.<sup>45</sup> The real obstacle to international cooperation is the systemic lack of security. Survival, not welfare, is the states' main concern, and a state's security depends on its power vis-a-vis other states. Because security and power are relative in nature, states are wary of every factor that could erode their power and damage their relative standing in the system. States are, in short, positional actors who mostly care about their performance vis-a-vis their competitors, and it is this concern with positionality that limits the capacity of states to cooperate.<sup>46</sup>

The misinterpretation of the realist notion of international anarchy leads neoliberals to an erroneous conceptualization of states' egoistic rationality. Because they underestimate the ubiquitousness of violence in the system and postulate that welfare is the main goal of states, "neoliberal institutionalists assume that states define their interests in strictly individualistic terms."<sup>47</sup> Neoliberals mistakenly see states as payoff maximizers and simplistically define a state's utility function as  $U = V$ , where  $U$  is a state's utility and  $V$  is the maximum payoff attainable.<sup>48</sup> The neorealist claim is,

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<sup>45</sup>See Grieco, "Anarchy and the limits of cooperation," pp.497-498.

<sup>46</sup>Ibid., pp.498-499.

<sup>47</sup>Ibid., p.496.

<sup>48</sup>Ibid., p.497.

instead, that states are defensive positionals, who are uncertain about other actors' future intentions and extremely concerned with the potential losses of their relative capabilities. States are not interested in the maximization of their payoffs. They are concerned with maintaining or improving their status vis-a-vis their real or potential opponents for security reasons.<sup>49</sup> Thus, states interpret payoffs not in absolute terms but in relative terms, and they define their utility function both in terms of their own payoffs and in terms of the opponent's payoffs as  $U = V - k(W - V)$ , where  $V$  is a state's individual payoff,  $W$  is the opponent's payoff, and  $k$  is "the state's coefficient of sensitivity to gaps in payoffs either to its advantage or disadvantage."<sup>50</sup>

State positionality generates what neorealists define as the "relative gains problem" of cooperation. Contrary to the neoliberal assertion that states are seekers of absolute gains, neorealists claim that states are principally concerned with relative gains. States are not atomistic actors as neoliberals claim but "negative altruists" whose utility varies inversely with the other's payoffs.<sup>51</sup> According to neorealists, the fear of being cheated is only a part of the problem of cooperation. Because states are preoccupied with relative gains, they will also be wary of how gains deriving from mutual cooperation will be distributed. Neorealists agree that large DC - CD

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<sup>49</sup>See *ibid.*, "Realist theory and the problem of international cooperation," p.602.

<sup>50</sup>*Ibid.*, "Anarchy and the limits of cooperation," p.500; see also *ibid.*, "Realist theory and the problem of international cooperation," p.608.

<sup>51</sup>See Gowa, "Anarchy, egoism, and third images," p.176; also Grieco, "Realist theory and the problem of international cooperation," p.606.

differentials reduce states' incentives to cooperate because they will provide a state that successfully defects with greater gains. Yet, the problem of relative gains apply also to CC outcomes. If, in fact, a state believes that benefits from mutual cooperation will be unequally distributed so that the partner will receive a greater share, then that state will refuse to cooperate or will weakly commit to the cooperative agreement.<sup>52</sup> If, in short, the relative allocation of benefits is likely to alter a state's relative position, defection is even strengthened as a dominant strategy.

The introduction of relative gains into the picture negatively influences all of the variables identified by Axelrod as conducive to cooperation. First and foremost, relative gains can alter the nature of the game being played. Relative gains considerations radically increase the severity of Prisoners' Dilemma, thus making a cooperative outcome even more unstable than usually postulated. Joseph Grieco, for instance, has offered an amended version of PD in which relative gains are computed into the payoff structure. The amended PD shows that, if payoffs from mutual cooperation are asymmetrically divided between the two players, the disadvantaged player's rank-ordering of payoffs will change so that it comes to prefer a Punishment (P) payoff to a Reward (R) payoff, provided that its sensitivity to gaps in gains is sufficiently high. In this case not only is the severity of PD increased, but PD itself is also transformed into a game of Deadlock with a  $T > P > R > S$  payoff ordering.<sup>53</sup> Joseph

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<sup>52</sup>See Grieco, "Anarchy and the limits of cooperation," p.499.

<sup>53</sup>See Grieco, "Realist theory and the problem of international cooperation," p.609.

Grieco's Amended Prisoners' Dilemma and the game of Deadlock are shown in figure 3-II at the end of this chapter.

In addition, the computation of relative gains into the payoff structure hinders the possibility of cooperation even where a collaborative outcome is more easily attainable. Duncan Snidal has demonstrated that relative gains' concerns may alter the ordering of payoffs in games of Assurance, Coordination, and Chicken so that these games are transformed into a PD game. If, for instance,  $S > R - T$ , and when the value of the coefficient of sensitivity to relative gains  $k$  is greater than  $(R - T)/(R - S)$ , games of Harmony become a game of Chicken. If relative gains concerns increase even more, so that  $k > S/T$ , the game of Chicken is transformed into a PD.<sup>54</sup> Similarly, Coordination games are transformed first into Chicken, and then into PD as relative gains concerns grow. Original games of Chicken are directly transformed into PD every time that  $k > S/T$ . PD maintains its original structure for every value of  $k$ , but its severity increases as  $k$  increases. If however  $k = 1$ , PD becomes a zero-sum game in which both players prefer not to cooperate.<sup>55</sup> The rapidity with which these changes take place depends of the original payoff structure, and clearly the "steeper" the payoff structure, the faster these transformations will occur.<sup>56</sup> The games of Harmony, Assurance (Stag Hunt), Coordination, and Chicken are shown in Figure 4-II at the end

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<sup>54</sup>See Duncan Snidal, "Relative gains and the pattern of international cooperation," *American Political Science Review*, Vol.85, No.3 (1991), pp.708-709.

<sup>55</sup>*Ibid.*, p.710.

<sup>56</sup>*Ibid.*, p.711.

of the present chapter.

Furthermore, relative gains considerations negatively affect the “shadow of the future” and the importance of iteration. By definition, relative gains concerns force the players to focus their attention on the interaction at hand. Where payoffs from the initial cooperation are unequally divided so that the relation between the actors becomes asymmetrical, the player who has been at disadvantage on the first interaction will be unlikely to place a great value on future cooperative outcomes, because it fears that future distributions of gains will follow the asymmetric pattern that has been established. That is, the disadvantaged player fears that short-term relative losses will generate greater relative losses in the future, and this negatively affects its assessments of future plays and the discount parameter it will apply. Unless the distributional asymmetry is immediately redressed, future cooperative outcomes will be highly discounted. Instead of playing a “string” of interrelated games, the super-game is broken down into a sequence of disconnected single-shot games that the disadvantaged player will interpret as Deadlocks. When relative gains reinforce the logic of defection, as demonstrated by Grieco and Snidal, iteration is of little avail. Redressing the asymmetric distribution of cooperative payoffs will require that the players reach an agreement outside the game being played, which presents them again with a situation resembling a single-shot Prisoners’ Dilemma, that is, with the original problem of cooperation. In summary, even if relative gains considerations do not eliminate the possibility that future games will be played, they are very likely to reduce the efficacy of

the “shadow of the future” and iteration, because they induce players to operate within a very limited time horizon.

Even more important, relative gains concerns undermine the effectiveness of the norm of reciprocity and the possibility that nice, retaliatory strategies will collectively stabilize. Relative gains not only increase the severity of PD, but they also modify the environment in which the game takes place. In the presence of relative gains concerns, it is fair to expect that the majority of the strategies involved will favor continuous defection. With a weak “shadow of the future,” most strategies are likely to start out as mean strategies, that is, they are likely to defect on the first move. The cluster of nice strategies necessary for the success of strategy that practice reciprocity is likely to be much smaller than that of Axelrod’s tournaments or completely absent. Busch and Reinhardt have, for instance, offered a manipulation of Axelrod’s tournament results by introducing relative gains concerns for values of  $k$ , the sensitivity coefficient, ranging from 0.1 to 0.9.<sup>57</sup> The unsurprising results were that nice strategies, TFT included, do progressively worse as relative gains concerns increase. On the contrary, mean strategies that performed poorly in Axelrod’s tournaments thrive in an environment dominated by relative gains. In Busch’s and Reinhardt’s revised tournaments, nice strategies “survive” only if they are also retaliatory and only until  $k = 0.7$ . Beyond this point, nice strategies almost drop out of sight, while mean strategies do increasingly

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<sup>57</sup>See Marc L. Busch and Eric R. Reinhardt, “Nice strategies in a world of relative gains,” *Journal of Conflict Resolution*, Vol.37, No.3 (1993), p.433.

better.<sup>58</sup> The only condition in which nice strategies practicing reciprocity did fairly well in the presence of relative gains was when the population was so reduced as to include only retaliatory strategies, a prerequisite that can hardly be met in the real world.<sup>59</sup>

This leads to the second problem that relative gains create for the norm of reciprocity. Relative gains may, in fact, weaken the efficacy of reciprocity by reducing the actors' ability to effectively retaliate. In international politics, unlike tournaments of simulated PD, retaliation is not cost-free. An actor who has suffered relative losses on any given interaction may find its ability to retaliate impaired in successive encounters. This problem holds for relative losses produced by CD outcomes as well as for relative losses deriving from unequal distributions of payoffs in situations of mutual cooperation.<sup>60</sup> Even if it is (unrealistically) assumed that a player which constantly receives asymmetrical CC payoffs goes along with cooperation, the problem arises that gaps between the two actors will progressively grow. Gains will, in fact, cumulate for the player receiving the largest share, so that it may be able to modify the payoff structure of subsequent interaction, while effective retaliation will become more expensive and problematic for the disadvantaged player. In summary, in the real world the capacity for retaliation depends on a player's position in the system, and

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<sup>58</sup>See Busch and Reinhardt, "Nice strategies in a world of relative gains," pp.438-441.

<sup>59</sup>Ibid., pp.442-443.

<sup>60</sup>See Matthews, "Current gains and future outcomes," p.124.



positionality is affected by relative gains and losses. Therefore, not only do relative gains affect a player's willingness to cooperate in the first place, but they also compromise its willingness to adhere to the norm of reciprocity in the long haul.

Relative gains also undermine the neoliberal argument that cooperation is more likely to emerge when few actors are involved (a small-N setting) because reciprocity is more effective in such an environment. On this issue, the neorealist perspective is that in small-N settings actors will be more attentive to how cooperative gains are distributed. When only a few players interact, the environment is likely to be more competitive, and actors are more likely to measure their performance by comparing it to that of others.<sup>61</sup> This wariness of each other's relative position is amplified by the fact that small-N situations offer the actors fewer alternative outlets for interaction. Because the same few players are likely to meet each other again, relative gains are likely to be turned into further asymmetrical advantages in the future. On the contrary, relative gains -neorealists claim- matter less in large-N settings. When, in fact, gains from mutual cooperation are divided among a large number of actors, the distribution is likely to be comparatively more symmetrical. Even if one or few players receive a greater share of the benefits, the relative size of that share is likely to be so small as to be insignificant for future interactions.<sup>62</sup> Thus, the neoliberal argument that small-N

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<sup>61</sup>See Duncan Snidal, "International cooperation among relative gains maximizers," *International Studies Quarterly*, Vol.35, No.4 (1991), pp.388-389.

<sup>62</sup>For the neorealist argument on the N-players problem, see Snidal, "Relative gains and the pattern of international cooperation," pp.714-719; Joseph Grieco, Robert Powell, and Duncan Snidal, "The relative-gains problem for international cooperation,"

situations favor the emergence of cooperation because iteration is more likely to occur, information is more easily available, and reputations can be easily established is completely turned around by neorealists. It is exactly because of these factors - neorealists state- that cooperation is unlikely to develop in small-N settings.<sup>63</sup>

In conclusion, according to neorealists, because relative gains increase the severity of PD, shorten the “shadow of the future,” and undermine reciprocity, the neoliberals’ enthusiasm about the possibility of the spread of cooperation is unsubstantiated. States’ goal of survival and their concern with positionality bring about the problem of relative gains, and relative gains make real situations of Prisoners’ Dilemma extremely difficult to solve. When cooperation does occur in the international system, it is either because the situation does not involve relative gains or because the actors are not facing a PD. Indeed, the most skeptical among neorealists have suggested that, contrary to the neoliberals’ claims, Prisoners’ Dilemma is not an adequate representation of the problem of international collaboration, and that we should think of Harmony when we observe cooperation and of Deadlock when we

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*American Political Science Review*, Vol.87, No.3 (1993), pp.729-733 and 738-739; Milner, “International theories of cooperation among nations,” pp.473-474; and Snidal, “International cooperation among relative gains maximizers,” pp.387-402.

<sup>63</sup>Indeed, Duncan Snidal claims that, even though they are relative gains seekers, if the number of players is sufficiently large so as to make the impact of relative gains irrelevant, states may entirely drop their relative gains concerns and pursue the maximization of their absolute gains. See Snidal, “International cooperation among relative gains maximizers,” pp.387-389 and 399-401.

observe conflict.<sup>64</sup> Of course, not all realists share this extreme view. As stated at the beginning of the chapter, the majority of them agree that PD is the most useful *theoretical* illustration of the problem of cooperation. The real issue on which neorealists disagree with neoliberals is the possibility to *practically* resolve the dilemma. As long as neoliberals cannot account for the impact of relative gains considerations on the states' willingness to cooperate, they cannot claim that their approach is superior to realism.

### **The relative weight of relative gains**

Yet, to cast the neoliberal/neorealist debate on relative gains in terms of interpretations of the notion of anarchy and of assumptions about states' objectives provides only part of the picture. The debate was framed in that format at its inception but has, thereafter, evolved into a milder dispute paradoxically aimed at establishing the "relative" impact of relative gains on international cooperation. With few exceptions, attempts to assert the theoretical superiority of one approach over the other have been abandoned. In regard to the issue of relative gains, "neoliberalism and neorealism are such closely intertwined theories that more is lost than gained by treating them as

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<sup>64</sup>See Harrison Wagner, "The theory of games and the problem of international cooperation," *American Political Science Review*, Vol.77, No.2 (1983), pp.344-345. In relation to Wagner's argument, see also Oye's comment in "Explaining cooperation under anarchy," p.7.

diametrically opposed approaches.”<sup>65</sup> After coming to an agreement about the definition of cooperation and the models to be used in the investigation of the problem, neorealism and neoliberalism have converged in positing the question of the different impact of relative gains in different issue-areas as the problem of greatest theoretical relevance.

It can be recalled from the previous discussion that neoliberals do not conceive the payoff structure of Prisoners’ Dilemma to be uniform in every circumstance. A cornerstone of the neoliberal argument is that states’ fear of being cheated in cooperative agreement is less where PD is not particularly severe. Cooperation can be more easily achieved when  $DC - CD$  and  $DC - CC$  differentials are minimal. Moreover, the norm of reciprocity is likely to work more effectively in those contexts. Thus, neoliberals draw a clear distinction between the area of security, where PD payoffs are “steeper” and losses can be disastrous, and the area of political economy, in which the “shadow of the future” is longer and retaliation less costly.

Similarly, it can be recalled that neorealists recognize that not all states respond to the relative gains problem in the same way. According to their relative position in the system states can be more or less concerned with relative gains. In order to capture this variability, neorealists insert in their formulation of a state’s utility function the coefficient of sensitivity to relative gains  $k$ . Joseph Grieco suggests that each state’s  $k$  is a function of several factors. In particular,  $k$  varies according to issue-areas and to

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<sup>65</sup>See Snidal in Grieco, Powell, and Snidal, in “The relative-gains problem for international cooperation,” p. 738.

the long-term convertibility of payoff gaps into security advantages. In Grieco's own words,

Differences in issue areas are likely to influence state sensitivity coefficients. Given its core interest in survival, a state's sensitivity coefficient with respect to a given partner will be markedly higher in military than in economic matters. However, a state's sensitivity coefficient in economic issue areas is not likely ever to be zero, given the long-term fungibility between economic and military capabilities.<sup>66</sup>

Here the similarity between the neoliberal and the neorealist arguments is striking, for both neoliberals and neorealists have come to share the view that cooperation is more feasible when and where security considerations are limited or absent. Indeed, we have witnessed a "tradeoff" between exponents of the two schools of thought. While, in fact, neoliberals have embraced the notion that relative gains constitute a problem for international cooperation, neorealists have adopted the view that relative gains have a different weight in different issue-areas. Robert Keohane, one of the most authoritative neoliberal authors, states for instance that

the interaction between wealth and power is dynamic because both wealth and power are continually altered, as are the connections between them.....In world politics, uncertainty is rife, making agreements difficult, and no secure barriers prevent military and security questions from impinging on economic affairs. In addition, disagreements about how benefits should be distributed permeate the relations among actors and persist because bargains are never permanently valid.<sup>67</sup>

Thus, much of current debate on relative gains focuses on the problem of determining the differences and the level of interconnectedness between the area of

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<sup>66</sup>See Grieco, "Realist theory and the problem of international cooperation," p.611.

<sup>67</sup>See Keohane, *After Hegemony*, p.18.

security and that of international economy. Neorealists, still placing emphasis on states' goal of survival, stress the problem of convertibility of economic benefits into security gains, but they are at odds when they attempt to demonstrate in actuality that security concerns drive states' behavior in their interactions in the area of political economy and may motivate the lack of international cooperation on issues involving welfare.<sup>68</sup> Neoliberals, on the other hand, claim that the problem of convertibility is overstated, and that the influence of relative gains and security concerns on interstate cooperation depends on general patterns of amity and enmity among the actors involved, on the costs of warfare at a specific point in time, and on the development of military technology.<sup>69</sup> Differences among issue-areas, neoliberals seem to conclude, are nonetheless significant, and they matter for explaining the behavior of states more than neorealists are willing to concede.

The tendency, manifested by both theoretical perspectives, of focusing on the problem of issue-areas in the attempt to explain the impact of relative gains on interstate cooperation has led to a narrow formulation of the broader theoretical problem. The common assumption that relative gains influence the prospects for international cooperation, but that this influence varies according to different

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<sup>68</sup>See, for instance, Grieco, *Cooperation Among Nations*, chap.8. See also Helen Milner's comment on Grieco's work in "International theories of cooperation among nations," p.487.

<sup>69</sup>See Robert Powell, "Absolute and relative gains in international relations theory," *American Political Science Review*, Vol.85, No.4 (1991), pp.1305-1306; and *ibid.*, "Guns, butter, and anarchy," *American Political Science Review*, Vol.87, No.1 (1993), p.127.

circumstances, has generated a plethora of models and case studies aimed at specifying when, how, and how much relative gains have an impact on relations among states.

The consequence of focusing on the relative weight of relative gains within or across specific issue-areas is that this approach recasts the theoretical question in such a way that relative gains no longer constitute an independent variable that may explain the problem of international cooperation. Rather, the relative gains factor becomes another dependent variable that needs to be explained, and that can be explained by the specific characteristics of a specific strategic context in which the interaction among states takes place.<sup>70</sup> This reformulation of the debate, rather than directly tackling the issue of relative gains, has opened up the problem of determining how convertible economic gains are, and how fungible military power can be. The logic behind this is that relative gains influence cooperation, and they do so because they are convertible and fungible. The issue of why states should care about convertibility and fungibility of relative assets has been temporarily set aside.

The relative gains debate, in short, has evolved, but it has not necessarily evolved forward. If the tough question of what motivates states' concerns with relative gains is avoided, we are relieved of the difficult task of drawing potentially incorrect assumptions about the influence of anarchy on states' behavior. The problem with the current approach to the issue of relative gains is that the main question may just be buried in details rather than resolved. By looking into issue-areas with an inductive eye

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<sup>70</sup>See, for instance, Powell, "Anarchy in international relations theory," p.314.

in the hope that context-specific features of interaction will solve the relative gains problem in its entirety, we may just end up with a multitude of sectoral theories but with no general, parsimonious, and systemic theory of relative gains.

As stated in the previous chapter, the distinction between issue-areas is not to be exaggerated. Attention to issue-areas is useful as long as we deductively look into them in search of confirmation of some broader assumptions. What is to be found inside and about issue-areas are differences and similarities in states' behavior, so that general conclusions can be drawn. Determining with precision the degrees of separation and of interconnectedness among issue-areas is likely to be a lost cause. Almost every economic issue may carry security consequences, and almost every security factor may have an impact on economic cooperation or discord. The distinction between issue-areas is to be used as an analytical tool, but it must not be confused with the theoretical question.

As stated in the previous chapter, the assumption here is that international anarchy forces states to be positional actors independently of the main goal they set for themselves. States are assumed to be multipurposed actors who pursue both prosperity and survival at the same time. Because wealth and security are relative assets in an anarchical system, states must care about their relative position if they are to achieve such objectives. Relative economic losses can prevent a state from achieving prosperity as much as relative losses in security may compromise a state's survival. Moreover, relative gains and losses matter even more if they can be immediately



transformed into tangible advantages. Thus, looking separately at the areas of security and of political economy, as it will be done in the following chapters, is meaningful only if it shows that states equally care about relative gains in both areas. That is to say, the analytical distinction between issue-areas is useful only if it helps to demonstrate the hypothesis that relative gains matter not only across but also above issue-areas.

**Figure 1-II. Prisoners' Dilemma**

C, C	C, D
D, C	D, D

Row = Player 1  
 Column = Player 2  
 C = Cooperation  
 D = Defection

$DC > CC > DD > CD$

R, R	S, T
T, S	P, P

R = Reward  
 T = Temptation  
 P = Punishment  
 S = Sucker's payoff

$T > R > P > S$

**Figure 2-II. Prisoners' Dilemma with ordinal-value payoffs**

3, 3	1, 4
4, 1	2, 2

4 = most preferred outcome  
 1 = least preferred outcome

### Figure 3-II. Amended Prisoners' Dilemma and Deadlock

#### a) Amended Prisoners' Dilemma

$(1 + k)R - kR^*, (1 + k^*)R^* - k^*R$	$(1 + k)S - kT^*, (1 + k^*)T^* - k^*S$
$(1 + k)T - kS^*, (1 + k^*)S^* - k^*T$	$(1 + k)P - kP^*, (1 + k^*)P^* - k^*P$

Row player's payoffs = T, R, P, S

Column player's payoffs = T\*, R\*, P\*, S\*

Players' utility function:  $U = V - k(W - V)$  or  $U = (1 + k)V - kW$

Players' coefficients of sensitivity to relative gains = k, k\*

Row player's preferences:  $[(1 + k)T - kS^*] > [(1 + k)R - kR^*] > [(1 + k)P - kP^*] > [(1 + k)S - kT^*]$

Column player's preferences:  $[(1 + k^*)T^* - k^*S] > [(1 + k^*)R^* - k^*R] > [(1 + k^*)P^* - k^*P] > [(1 + k^*)S^* - k^*T]$

Source: Grieco, "Realist theory and the problem of international cooperation," pp.608-609

#### b) Deadlock

2, 2	1, 4
4, 1	3, 3

4 = most preferred

1 = least preferred

**Figure 4-II. Games of Harmony, Assurance, Coordination, and Chicken****a) Harmony**

4, 4	2, 3
3, 2	1, 1

4 = most preferred

1 = least preferred

**b) Assurance (Stag Hunt)**

4, 4	1, 3
3, 1	2, 2

**c) Coordination**

2, 2	3, 4
4, 3	1, 1

**d) Chicken**

3, 3	2, 4
4, 2	1, 1

## CHAPTER III

### SECURITY, RELATIVE GAINS, AND COOPERATION

Before the “neo-neo synthesis” of the 1980s, the study of the area of security and of its internal dynamics has been an almost exclusive prerogative of neorealism. The typical neorealist assumption that states are principally concerned with survival made security the obvious object of attention for scholars coming from this perspective. Yet, as the issue of international cooperation has become central to the debate in International Relations theory during the last 20 years, neoliberals have shown greater interest in the analysis of this issue-area.

In regard to security, exponents of both schools agree that the problem of relative gains has greater impact on the prospect for international collaboration than in other issue-areas. Neorealists traditionally emphasize that security depends on the possession of power, and because power is always relative, states will be concerned with relative gains whenever security considerations intrude. Similarly, neoliberals have come to concede that security concerns produce a more severe Prisoners’ Dilemma (PD) in which states fear that they will be cheated and are likely to be wary of the opponents’ gains. Neoliberals’ and neorealists’ analyses of the security area, therefore, tend to be similar, if not in their starting assumptions, at least in the conclusions they draw.

Arguably, the only major difference still existing between neoliberalism and

neorealism on this issue concerns the extent to which relative gains concerns motivated by security considerations matter in relation to other areas of interaction. As previously noted, neoliberals tend to circumscribe the negative impact of relative gains on international cooperation to the security area, and they tend to use the peculiar characteristics of the security realm as a “reverse mirror image” of other issue-areas. Because the area of security is peculiar and unlike other issue-areas, non-cooperative behavior is limited to those few contexts of interaction in which security is involved. Neorealists, on the other hand, highlight the problem of the fungibility of security (military) advantages and of the convertibility of other gains into security gaps, and they conclude that security considerations extend the problem of relative gains to other issue-areas. The remaining debate concerning relative gains and security is, therefore, one about degrees of cooperation and conflict, which is of difficult solution since it calls into question radically different conceptions of power and rather elusive notions such as fungibility and convertibility.<sup>1</sup>

Rich, contextual analysis of the area of security is unlikely to provide definitive solutions to the problem of relative gains and international cooperation, and much less to the issues of convertibility of resources and fungibility of power. The usefulness of

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<sup>1</sup>On the issue of the neorealist view of aggregate power as opposed to the neoliberal view of “disaggregated” power, and on the elusiveness of the notion of fungibility, see Robert O. Keohane, “Theory of World Politics: Structural realism and beyond,” in *Neorealism and Its Critics*, Robert Keohane, ed. (New York: Columbia University Press, 1986,) especially pp.167 and 184-189. For an outstanding overview on the notion of fungibility of power and the problems inherent in such a concept, see David A. Baldwin, “Power analysis and world politics: New trends versus old tendencies,” *World Politics*, Vol.31, No.2 (1979), pp.161-194.

such an inquiry lies in the fact that, in the realm of security, it is possible to observe the dynamics of relative gains in their extreme aspect. An additional advantage is that the analysis of the security area allows researchers to introduce factors that tended to be overlooked in the more general, game-theoretical treatment of the relative gains problem (as it was presented in chapter II), such as the character of military technology and weaponry, lack or availability of information, problems of perceptions and misperceptions, and patterns of amity and enmity. Finally, the analysis of the security area is useful in that it generates the hypothesis that states may approach the problem of cooperation in other issue-areas with the same *orientation* they hold for security-related matters -i.e., general concerns with positionality and tendency to perceive issues as almost zero-sum games- even when the same contextual characteristics do not subsist.

### **The security dilemma**

The security dilemma is the principal characteristic that distinguishes the area of security from other realms of interaction. In an anarchical system where the use of violence is an omnipresent reality, states strive to achieve the largest possible degree of security, and they believe that possession of power is the best avenue toward for the achievement of such a goal. This approach engenders the problem that "many of the means by which a state tries to increase its security decrease the security of others."<sup>2</sup>

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<sup>2</sup>See Jervis, "Cooperation under the security dilemma," p.169.

In fact, the same power that provides security to state A threatens the security of state B. State B, then, strives to attain more power, which in turn reduces state A's security, and so on. This dynamic, which is likely to continue endlessly, represents an unsolvable and inescapable puzzlement for every state. Because in an anarchical system, security depends on power, and power is a relative good, states are constantly forced to face the security dilemma.

The problem of cooperation under the security dilemma is usually represented as either a game of Prisoners' Dilemma or as an Assurance game (Stag Hunt). In the PD representation, both players have a common interest in reaching some agreement that will stabilize their mutual level of security (CC). Yet, because they do not trust each other, and they both believe the other player has a dominant strategy of defection, they actually choose to acquire more capabilities (a DD outcome), an outcome that leaves them as insecure as before. In the Stag Hunt representation, both players place the greatest value on the achievement of a security agreement and consider unilateral defection (DC) only the second best solution. However, because mutual defection (DD) is still superior to being "suckered," the situation presents the players with two possible equilibrium outcomes (CC and DD). Thus, the players end up either both defecting or both cooperating, depending on how well they manage to coordinate their policies. Generally, the PD model is used to represent a single-shot interaction, while Stag Hunt is said to better illustrate iterated encounters between two states under the



security dilemma.<sup>3</sup> Whether states are actually able to move from the PD model to a Stag Hunt representation depends on a variety of contextual factors that will be analyzed later in the chapter.

Yet, both Prisoners' Dilemma and Stag Hunt are incomplete models for representing the problem of cooperation under the security dilemma.<sup>4</sup> Both models, in fact, fail to capture the essential element that actually generates the security dilemma, that is, the relative nature of security. Unlike the objective character of the payoff structure of the two types of games, one player's perceived level of security is strictly dependent on the other player's level of security. Because any means employed by state A to expand or preserve its security decreases the security of state B, and viceversa, any gains achieved by A will be interpreted as a relative loss by B. The relativistic dynamic of security cannot be captured in a symmetric CC outcome which both states have a common interest to achieve. Perceptions of security do not correspond to the actual payoff structures of the game theoretical models. The state enjoying a temporary relative advantage is likely to see a CC outcome as a victory for its weaker opponent. Similarly, DD outcomes will not be interpreted as suboptimal outcomes if they reinforce or reduce existing asymmetries. Even at an equal level of capabilities, a state may fear that the opponent will take advantage of the moment of

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<sup>3</sup>See Jervis, "Cooperation under the security dilemma," p.171. See also Glenn H. Snyder, "Prisoners' Dilemma and Chicken models in international politics," *International Studies Quarterly*, Vol.15, No.1 (1971), pp.73-82.

<sup>4</sup>See Wagner, "The theory of games and the problem of international cooperation," pp.344-345.

parity for risking an attack. The relative and perceptual nature of security induces states to see the situation as a zero-sum game in which there is no mutual interest at stake.

The zero-sum character of the security dilemma creates an almost insurmountable obstacle for cooperation in the area of security. Because "mixed-interests" situations exist even in the security area, the problem of international cooperation in this realm can still be modeled as a Prisoners' Dilemma for analytical purposes.<sup>5</sup> Yet, such a game is constantly complicated by the pervasiveness of the subordinated zero-sum game of the security dilemma. Since one state's gain is another state's loss, the security dilemma forces states to look at the payoff structure in relative rather than absolute terms. In short, the security dilemma embodies and amplifies the general problem of relative gains analyzed in the previous chapter.<sup>6</sup> Under the security dilemma, a state's utility function will be based on how much it is likely to gain or lose in relative terms in all of the four possible outcomes of a PD. Arguably, Joseph Grieco's Amended Prisoners' Dilemma is a more correct representation of problem of cooperation in the presence of the security dilemma.<sup>7</sup>

Because the zero-sum nature of the security dilemma exacerbates the relative gains problem, the "conflict" element of mixed-interests situations is likely to take

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<sup>5</sup>See Lipson, "International cooperation in economic and security affairs," p.13.

<sup>6</sup>See Snidal, "International cooperation among relative gains maximizers," p.388.

<sup>7</sup>See Grieco, "Realist theory and the problem of international cooperation," p.609. See also Figure 3-II in Chapter II.

precedence over the “common interest” element. This is not equivalent to saying that cooperation does not occur in the security realm. States, in fact, cooperate on a range of security issues, ranging from alliances and formal arms control agreements to more loosely defined security regimes. Yet, cooperation in the area of security occurs only when it is compatible with relative gains considerations, and it is likely to be feeble and unstable, since it is extremely dependent on both systemic changes of relative power and changes in contextual features of the area itself.

### **Cooperation under the security dilemma**

The introduction of security considerations into the problem of interstate cooperation negatively affects many of the variables isolated by neoliberals as being conducive to cooperative outcomes in situations of iterated Prisoners’ Dilemma. First, in the presence of security concerns, the payoff structure becomes “steeper,” thus making PD more severe and more difficult to solve and often transforming it into different games. Second, when security is involved, iteration is less likely to occur, and the “shadow of the future” tends to be shorter. Third, difficulties in recognizing defection and high costs of retaliation make retaliatory strategies extremely expensive, quite dangerous, and often ineffective. Even though security considerations do not make collaboration absolutely impossible, they clearly expand the range of the necessary and sufficient conditions that must be met for states to achieve some form of cooperative agreement.

The general game theoretical models employed by Axelrod and other neoliberal authors usually fail to take into consideration the fact that players can be eliminated from the game.<sup>8</sup> It is often argued that states do not usually go out of business. Yet, history shows that states can, and often do, disappear. If not their primary goal, survival is certainly one of the utmost priorities of states. If a state is not capable of preserving its own autonomy and integrity in an anarchical environment, it will not be able to realize other goals that follow from survival.<sup>9</sup> If, therefore, the possibility that a state will be driven out of a PD game is to be included in the payoff structure, it is very likely that the resulting game will be extremely severe. When the dangers associated with a sucker's payoff (CD) entail the chance of extinction or of suffering irreparable damages, a state's strategy will be dominated by the fear of being cheated. Conversely, the possibility of improving one's position by eliminating a competitor or by placing the other player "at an immediate and overwhelming disadvantage" increases the benefits of unilateral defection (DC).<sup>10</sup> As illustrated in the preceding chapter, cooperation is extremely difficult to achieve in PD situations with high DC - DC differentials.<sup>11</sup>

Whenever security considerations are involved, the same dynamics apply also to benefits deriving from cooperation. If CC payoffs are not symmetrically distributed,

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<sup>8</sup>See Stein, *Why Nations Cooperate*, p.88.

<sup>9</sup>*Ibid.*, p.87.

<sup>10</sup>See Lipson, "International cooperation in economic and security affairs," p.14.

<sup>11</sup>*Ibid.*, pp.8 and 14.

the security dilemma will induce the player at disadvantage to see the asymmetry as a loss. If, in fact, player A receives more than player B in a security agreement, B's security is clearly reduced, and so is its willingness to go along with the security agreement. Because in the area of the security there is a high premium associated with "swift, decisive defection," the player who would receive the smaller share of a CC payoff greatly fears that the opponent will take advantage of the temporary gap.<sup>12</sup> In such a case, a DD payoff which maintains the relative balance between the two players is likely to be preferred to an asymmetric CC payoff, and this transforms a situation of Prisoners' Dilemma into a game of Deadlock.<sup>13</sup> Arms races, for instance, are generated by the fear of being cheated and of receiving asymmetric returns, which induces states to see the situation as a Deadlock rather than a PD.<sup>14</sup>

Not only do security considerations sharpen the relative gains problem and increase the severity of the payoff structure, so as to make cooperation more difficult, but they also substantially limit prospects of iteration and the "shadow of the future." Because the danger of being eliminated is always present, the possibility of iteration in the security area is not as substantive as in other issue-areas. With a high uncertainty concerning future interactions, players tend to highly discount future payoffs and see

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<sup>12</sup>Ibid., p.17.

<sup>13</sup>See Grieco, "Realist theory and the problem of international cooperation," pp.609-610.

<sup>14</sup>See George W. Downs, David M. Roake, and Randolph M. Siverson, "Arms races and cooperation," *World Politics*, Vol.38, No.1 (1985), pp.120-121.

defection as the only rational strategy available.<sup>15</sup> As just mentioned, the possibility of receiving irreversible damages through unreciprocated cooperation is also very high in the security area. Even if a player does not run the risk of being eliminated, it has to face the danger of being put at immediate and irreversible disadvantage. This is likely to highly compromise the player's chances to play effectively in future interactions. A sizable loss on the first interaction may mean an even greater loss in the second interaction, and these losses are likely to grow larger as the game progresses. Because of this constant risk, future payoffs will be highly discounted, and defection since the first move will be seen as the safest strategy.

Security considerations and concerns with relative power also undermine the effectiveness of those strategies based on reciprocity that have been found to be conducive to cooperation. It may be recalled that the effectiveness of strategies such as TIT FOR TAT (TFT) lies in their being nice, forgiving, and retaliatory. Being nice, that is, never being the first to defect, and being forgiving in an area where instant elimination is a constant possibility is clearly a shortcoming rather than an advantage. Since iteration is not assured, immediate defection is the dominant strategy for a player which makes of survival its priority. Displaying willingness to cooperate first may also be interpreted as a sign of weakness and may induce the opponent to defect on future plays.<sup>16</sup> Furthermore, it can be recalled that in Axelrod's tournaments each strategy's

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<sup>15</sup>See Lipson, "International cooperation in economic and security affairs," p.14.

<sup>16</sup>Ibid., p.17.

capacity for retaliation is unaltered by having suffered previous defections. In the area of security, any relative loss caused by unreciprocated cooperation not only decreases an actor's security, but it also undermines its capacity to retaliate effectively in future plays.<sup>17</sup> Moreover, retaliation in the area of security is likely to be extremely costly. Acquiring new capabilities may be not only very expensive, but also inconclusive if the opponent has gained a large advantage by defecting first. Even worse, if the problem of security cooperation is represented as a PD involving a choice between attack and self-restraint, the state that has been "suckered," may find itself completely incapacitated to retaliate (assumed that it has not already been defeated or conquered) against an opponent that is now stronger.<sup>18</sup>

In order to be effective, retaliation must also be rapid. If retaliation is delayed, the defecting actor is likely to conclude that defection pays off.<sup>19</sup> Timeliness of retaliation depends on efficient monitoring and ability to distinguish between cooperation and actual defection. Monitoring and discrimination of actions, however, may be quite difficult in an issue-area such as that of security, which is dominated by secrecy and lack of transparency.<sup>20</sup> The problem of strategic misrepresentation, that is,

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<sup>17</sup>See Matthews, "Current gains and future outcomes," p.124.

<sup>18</sup>See Axelrod and Keohane, "Achieving cooperation under anarchy," pp.232-233

<sup>19</sup>See Axelrod, *The Evolution of Cooperation*, p.185; see also Snyder, "Prisoners' Dilemma and Chicken models in international politics," p.69 (fn.4).

<sup>20</sup>When information is scarce and unreliable, actors may not only face the problem of discrimination between cooperation and defection, but also the problem of identifying who the actual defectors are. Such a problem is absent in a 2-players PD, but it is quite

pretending to have different preferences from those actually held, is widespread in the realm of security.<sup>21</sup> Lack of verifiable information, coupled with problems of imperfect intelligence, makes it difficult for an actor to correctly assess the opponent's actions. Robert Jervis points out that in Axelrod's tournaments TIT FOR TAT works well when there is a one-percent error rate in the correct identification of the other's behavior, but that such a figure "is drastically lower than that which can be expected in political interactions."<sup>22</sup>

Moreover, in the security area the very meaning of cooperation and defection may be unclear. A state's policies may simultaneously express both cooperation and defection. Because of the "fuzziness" typical of the area of security, it has been suggested that we should think of cooperation and defection in this area as a continuum, rather than a dichotomy.<sup>23</sup> Where secrecy and deception dominate, and where actors' choices are difficult to classify, defection may easily go undetected for a long time. If the time span between the actual defection and detection of it is too long, retaliation may become difficult and arguably useless for the player that practices reciprocity.<sup>24</sup>

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frequent in the multi-player environment of world politics. See Axelrod and Keohane, "Achieving cooperation under anarchy," p.235-236.

<sup>21</sup>See Downs, Rocke, and Siverson, "Arms races and cooperation," p.133.

<sup>22</sup>See Jervis, "Realism, game theory, and cooperation," p.339.

<sup>23</sup>Ibid., pp.329-332.

<sup>24</sup>See Gowa, "Anarchy, egoism, and third images," p.182.



Not only can defection be confused with cooperation, but also cooperation on the part of the opponent may be “negatively” interpreted. Robert Jervis suggests that decision makers, when they correctly perceive that an enemy is cooperating, are likely to believe that it is doing so because it has no choice. Thus, when cooperation actually occurs, there is the danger that statesmen underestimate the opponent’s ability to defect and come to believe that they can actually get away with some exploitation. When the other side’s capacity to retaliate is misjudged, it is unlikely that players will correctly recognize that a strategy of reciprocity is being employed, and it is unlikely that they will believe in the effectiveness of such a strategy.<sup>25</sup> Finally, retaliation may be not only excessively delayed, but also exceedingly fast. The problem of information that characterizes the area of security induces the adoption of worst-case scenarios and the tendency to overestimate the opponent’s capabilities and inimical intentions.<sup>26</sup> Under these conditions, the tendency is that of constantly having “the finger on the trigger.” Here, the difference between a strategy of reciprocity and a strategy of constant defection becomes blurred. In both cases, uncertainty and anxiety induce states to strike first.<sup>27</sup> When a player is too rapid in retaliating, the risk is that of punishing mistakenly perceived intentions rather than actual actions. When reciprocity is not supported by effective monitoring and timeliness of response, cooperation is unlikely to

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<sup>25</sup>See Jervis, “Realism, game theory, and cooperation,” pp.338-339.

<sup>26</sup>See Downs, Rocke, and Siverson, “Arms races and cooperation,” pp.134-135.

<sup>27</sup>See Lipson, “International cooperation in economic and security affairs,” p.15.

develop.

Finally, problems of information are very likely to complicate situations that are less problematic than Prisoners' Dilemma. If it is assumed that some security issues may be resolved through coordination rather than cooperation, it is possible to picture how the lack of information typical of this area prevents the actors from seeing where the two possible equilibria lie. Even if an equilibrium is identified, problems of imperfect information make it difficult for states to clearly understand whether the equilibrium is a favorable one and whether gains from coordination are being equally distributed. How gains are distributed clearly matters, because in this area states cannot exclude the possibility of the use of force. In the realm of security, even in situation requiring simple coordination, states face the same intricacies of a Prisoners' Dilemma. Security requirements foster misinformation and lack of communication which, in turn, prevent states from excluding the option that partners will use force. Under these circumstances, states' incentives to follow the equilibrium are undermined.<sup>28</sup>

To summarize, in the area of security the preconditions favorable to the emergence of cooperation may be extremely weak or completely absent. Because survival is at stake, because iteration is not guaranteed, because reciprocity is costly and likely to be ineffective, and because uncertainty dominates, states find constant

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<sup>28</sup>For an overview of the problem of information in situations requiring coordination, see James D. Morrow, "Modeling the forms of international cooperation: Distribution versus information," *International Organization*, Vol.48, No.3 (1994), pp. 387-423, and especially pp.413-414.

defection to be the safest strategy. Continuous defection precludes the achievement of the greater gains of mutual cooperation, but it also eliminates the danger of conceding a decisive advantage to the adversary. Where survival is the principal concern, a state's preoccupation is with the immediate rather than with the long-term. When the security dilemma dominates, states are likely to depart from the economic rationality and the long-time horizon required for resolving the Prisoners' Dilemma. States enter the arena of security with a conservative rationality. They are likely to eschew the risks associated with greater future gains in favor of the maintenance of their current relative position.<sup>29</sup> Survival, as a state's objective, and the security dilemma not only change the characteristics of the context of interaction, but they also modify the orientation with which states approach the interaction. The area of security is not necessarily a zero-sum environment. There are common interests to be pursued even when survival is at stake. What makes this area more similar to a zero-sum context is the way in which the actors perceive the game being played and approach it.

### **Perceptions of security**

As previously discussed, the problem of cooperation in the area of security can be represented as either a Prisoners' Dilemma or a game of Stag Hunt, but both models are imprecise in that they do not capture the actors' perceptions of the relative character of security. In opposition to this argument, it has been proposed that security

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<sup>29</sup>See Stein, *Why Nations Cooperate*, pp.106-110.

is an absolute value, and that states measure it in absolute terms. States think of relative gains or losses in terms of improvements or decreases in their level of security and not in their level of power as a means to achieve security. Looking at power as the only measure of security is equivalent to confusing ends and means, and it leads to an overestimation of the level of conflict in the security area. Cooperation -the argument runs- is another means for states to achieve security. Such an argument rests on the fact that states may accept reductions of their capabilities if this improves their security, and on the consideration that an increase in capabilities may not correspond to an increase in security. Often, it is argued, an increase in state A's security may correspond to an increase in state B's security, even if this requires that the latter renounces some of its capabilities. It follows that states' evaluations of security are not related to power, and that relative gains in terms of capabilities do not preclude cooperation. What prevents cooperation in the security area are, instead, different relative levels of the absolute value, i.e., security.<sup>30</sup>

Arguably, the argument is not dissimilar from adopting Stag Hunt as the starting model for the problem of cooperation in the area of security. That is to say, both states consider reciprocal security to be the highest value and a goal best achievable through cooperation. More precisely, because Stag Hunt has two

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<sup>30</sup>For a detailed overview of this argument, see Charles L. Glaser, "Realists as optimists: Cooperation as self-help," in *The Perils of Anarchy*, M.Brown, S. Lynn-Jones, and S. Miller, eds. (Cambridge, Mass.: MIT Press, 1995), pp.377-417; see also *ibid.*, "Correspondence: Current gains and future outcomes," *International Security*, Vol.21, No.4 (1997), pp.186-193; and *ibid.*, "The security dilemma revisited," *World Politics*, Vol.50, No.2 (1997), pp.171-201.

equilibrium outcomes, all that is required for states to achieve security is coordination of policies rather than cooperation. We are then left to wonder why repeated plays of Stag Hunt do not evolve into a situation of Harmony, and why states' actions are not conducive to a balance-of-security outcome rather than to balance-of-power. The answer may lie in the two flaws that mar the argument. First, power as a means and security as an end are so deeply intertwined that it is logically impossible to disjoint one from the other. "Cooperation and defections do not revolve around abstract ends, but around means."<sup>31</sup> How could states measure their level of security if they are deprived of the only parameter by which security can be evaluated? Second, the argument rests on the assumptions that all states hold similarly comparable notions of security, and that they perfectly know the motivations and intentions of their partners. By cooperating both states will feel equally secure, and none of them will be willing to defect by either acquiring more weapons or even by attacking.

However, security is a hard notion to pin down. States themselves are often uncertain about what security is. They define security in different ways. Sometimes a state adopts different definitions of security in different circumstances. How much security does a state need? How much security is enough? States are likely to differ about how much security they desire.<sup>32</sup> Moreover, threats are not classified and perceived in the same fashion by all states. Alliance patterns, geographical distance or

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<sup>31</sup>See John C. Matthews, "Correspondence: Current gains and future outcomes," *International Security*, Vol.21, No.4 (1997), pp.193-197, and especially p.195.

<sup>32</sup>See Jervis, "Cooperation under the security dilemma," p.174.

proximity, historical relations of amity or enmity, uncertainty about others' intentions, different distributions of military capabilities, the state of military technology; all of these induce states to hold different perceptions of threats. Different perceptions of threats reinforce states' tendency to define security in different terms and to search for different levels of security. Contrasting notions of security may clearly have negative repercussions on the possibility of cooperation in the security area. As Robert Jervis concludes, "one cannot easily say how much subjective security a state should seek. High security requirements make it very difficult to capitalize on a common interest and run the danger of setting off spirals of arms races and hostility."<sup>33</sup>

Conflicting perceptions of security among states, associated with other unfavorable contextual dynamics, may indeed have disruptive consequences for international cooperation and for states themselves. Stephen Van Evera, for instance, has shown how, in the years preceding World War I, states' exaggerated threat perceptions led to a general overestimation of the amount of security they needed. The tendency of overestimating the aggressive intentions of others, associated with a diffused belief in the effectiveness of offensive capabilities and in preventive expansion as the best means for achieving security, produced a breakdown in communication and a spiral of defection that eventually culminated in a conflict of global scale.<sup>34</sup> In a multipolar system, in which power was almost equally distributed among great powers,

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<sup>33</sup>Ibid., p.175.

<sup>34</sup>See Stephen Van Evera, "Why cooperation failed in 1914," *World Politics*, Vol.38, No.1(1985), pp.80-118.

each state feared that the opponents would take immediate advantage of “windows of opportunity” generated by temporary gaps in power.<sup>35</sup> Such a situation generated a vicious payoff structure in which unilateral defection was seen as the safest and actually most desirable strategy. That is, DC-CD differentials were perceived as extremely large and, conversely, CC-DD differentials were interpreted as minimal.<sup>36</sup> As a consequence, payoffs from mutual cooperation were largely discounted, while the costs associated with war were deemed minimal. Arguably, cooperation as an alternative option to the achievement of security disappeared from the perceptual horizon of the European states.<sup>37</sup>

Even if it is assumed that Stag Hunt is the correct model for interpreting the problem of cooperation under the conditions described by Van Evera, it appears that different or irreconcilable perceptions of the severity of the security dilemma can transform the situation into a Prisoners’ Dilemma of difficult solution that may be bordering on a game of Deadlock. This danger is not limited to peculiar contextual characteristics such as those preceding World War I. As indicated by Robert Jervis, the general tendency is for states to overestimate the hostility of others while, at the same

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<sup>35</sup>Ibid., pp.101-102.

<sup>36</sup>Ibid., pp.99 and 106.

<sup>37</sup>On the issue of misperceptions about the game being played and its severity in the years preceding World War I, see also Snyder, “Prisoners’ Dilemma and Chicken models in international politics,” pp.91-92.

time, underestimate "the extent to which their actions threaten or harm others."<sup>38</sup>

Moreover, this tendency is exaggerated by the aforementioned ambiguity that characterizes states' behaviors in the area of security. Because it is hard for states to distinguish between cooperation and defection, the tendency is for each side to believe it is cooperating while the other is defecting. This problem is exasperated between long-time opponents, which are extremely distrustful of each other and which are likely to develop negative expectations on the basis of a long past record of defection.<sup>39</sup>

As Downs, Rocke, and Siverson have shown, the problem of perceptions is particularly strong in a context characterized by imperfect information such as the area of security, and it severely undermines the efficacy of policies based on reciprocity. Downs and his colleagues have proposed a revised model of the problem of cooperation under imperfect information and control, in which state B's perceptions of cooperation or defection in regard to some action by state A depend on the probability that state A correctly implements that action, and on the probability that state B correctly interprets it. Let  $q$  be the probability that state A cooperates, and that B correctly perceives cooperation. Let  $x$  be the probability that defection is correctly perceived when state A actually defects. Let  $c$  be the probability that state A, which has decided to cooperate, correctly implements the action. Let also  $(1 - q)$  be the probability that the action is incorrectly implemented, and  $(1 - x)$  the probability that

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<sup>38</sup>See Jervis, "Realism, game theory, and cooperation," p.337.

<sup>39</sup>Ibid., pp.336-338.



state B perceives cooperation.<sup>40</sup> Then, the probability that state B perceives cooperation or defection depends of the products of the different combinations of the aforementioned probabilities, as shown in table 1-III:

**Table 1-III. Probabilities of perceptions of cooperation or defection under imperfect information**

A's intentions	B perceives cooperation	B perceives defection
Cooperate	$cq + (1 - c)(1 - x)$	$c(1 - x) + (1 - c)x$
Defect	$c(1 - x) + (1 - c)q$	$cx + (1 - c)(1 - q)$

Source: Downs, Rocke, and Siverson, "Arms races and cooperation," p. 141.

If it assumed that both parties are adopting a strategy of TIT FOR TAT, under these circumstances even a one-percent probability of misperception reduces the probability of a cooperative outcome (CC) to 0.25. This occurs because with imperfect information both states are "too ready to defect after the apparent previous defection of the opponent."<sup>41</sup> As the authors suggest, when the problem of perceptions and imperfect information is taken into account, reciprocity is likely to work better if it is probabilistic rather than automatic.<sup>42</sup> This requires a larger degree of forgiveness,

<sup>40</sup>See Downs, Rocke, and Siverson, "Arms races and cooperation," p. 140.

<sup>41</sup>Ibid., p. 141.

<sup>42</sup>Ibid., p. 142.

which states may be unwilling to adopt under the constraints and uncertainties produced by the security dilemma.

The problem of perceptions does not exclusively apply to the interpretation of others' intentions and actions and does not work independently from the problem of relative gains. Because a state is likely to misperceive both the actual payoff structure of a strategic context and the actions of others, it is also likely to misinterpret the opponent's relative share of power and the relative gains the adversary may derive from defection or from the asymmetrical distribution of benefits from cooperation.<sup>43</sup>

Arguably, the more a state is concerned with relative gains, the more it will be likely to misperceive the intentions and actions of other actors. The two dynamics may actually reinforce each other so as to become indistinguishable. It is not to be excluded that, in some circumstances, the problem of relative gains is entirely an issue of perceptions.

As Robert Jervis has pointed out, a state's calculation of its utility function is likely to be extremely subjective.<sup>44</sup> The reason for including the coefficient of sensitivity to relative gains  $k$  into a state's utility function and into the aforementioned Amended Prisoners' Dilemma was the attempt to take into account the subjective and perceptual component of this problem. As Joseph Grieco indicates, adversaries with a long history of enmity, for instance, are likely to have high sensitivity to relative gains, which

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<sup>43</sup>See Morrow, "Modeling the forms of international cooperation," p.413.

<sup>44</sup>See Jervis, "Realism, game theory, and cooperation," p.340.

reinforces their tendency to misperceive each other's intentions and actions.<sup>45</sup>

Misperceptions of actions and intentions are, in turn, likely to foster their degree of sensitivity to relative gains.

Emphasis on the role of perceptions in the area of security, however, should not lead us to mistakenly believe that the problem of cooperation under the security dilemma lies entirely at the unit-level. If all states held the same perceptions of security and of others' intentions and actions, the problem of cooperation in the security area would be minimal. However, because states measure security by means of power, and because power is unequally distributed in the international system, subjective perceptions matter in determining the prospects of cooperation under the security dilemma. The relative nature of power and the perverse dynamic of the security dilemma generate the problems of perceptions of security and relative capabilities which, in turn, worsen the impact that the security dilemma has on interstate cooperation. Unit-level factors may help to explain variations in degrees of the problem of perceptions and of relative gains, but the broader, general tendency - overestimation of other states' relative power and of their inimical intentions- arises at the same juncture where the security dilemma takes form.

### **The offense/defense balance and cooperation**

It is not only the relative nature of *quantitative* power that affects the prospects

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<sup>45</sup>See Grieco, "Realist theory and the problem of international cooperation," p.611.

for interstate cooperation in the area of security, but also its *qualitative* character. States may be said to measure their level of security by employing a gross index for gauging the relative distribution of aggregated power. Yet, when the adversaries' options to attack or exercise restraint are to be constantly monitored, states are also likely to pay attention to the qualitative nature of that power. Military capabilities - arguably the most straightforward measure of security among all the indexes of power - are not all alike. Weapons can, in fact, serve an offensive or a defensive function. The predominance of either offensive or defensive capabilities in states' military assets has great influence on the severity of the security dilemma and on the prospects for both general interstate cooperation and for collaboration in the area of security. Moreover, the balance between offense and defense has an impact on the weight that states attribute to relative gains which, in turn, may ameliorate or worsen the problem of cooperation.

Whether the offense or the defense has an advantage largely depends on the state of military technology and on the cost-effectiveness of either type of weapons. If, for instance, defensive weapons are more easily produced, less expensive, and more effective than offensive ones, states will find it rational to adopt a larger share of defensive weapons. The two aspects are usually combined into the so-called "offense/defense costs exchange ratio." As Robert Jervis puts it, "if each dollar spent on offense can overcome each dollar spent on defense, and if both states have the same defense budget, then both are likely to build offensive forces and find it attractive to

attack rather than to wait for the adversary to strike.”<sup>46</sup>

This view clearly assumes that states’ security policies are largely determined by the means available to them, and it is consistent with the proposition that states look at power as a measure of security. The offense/defense balance, in fact, influences both states’ perceptions of security and the range of their strategic options. When the offense prevails over the defense, states feel a high level of threat because they are aware that it is cheaper and more effective for potential opponents to attack rather than to exercise restraint. Wars are considered more profitable and less costly, with the expectation that they will be frequent and short. In this context, the severity of the security dilemma is heightened, since every increase in one state’s offense capabilities makes other states less secure. Such a scenario fosters arms races and perceptions that security may be better achieved through expansion. Because of mutual stimulation of these fears, states experience great tension, and they are likely to immediately and disproportionately respond to international crises.<sup>47</sup> If, on the other hand, the defense has the advantage, states will feel comparatively more secure, and the security dilemma will be more moderate. The dominance of defense makes offensive strategies more expensive and reduces the benefits, in security terms, that may be acquired by

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<sup>46</sup>See Jervis, “Cooperation under the security dilemma,” p.188. Several alternative definitions of the offense/defense balance and an excellent overview of the literature on the subject are offered by Jack S. Levy in “The offensive/defensive balance of military technology: A theoretical and historical analysis,” *International Studies Quarterly*, Vol.28, No.2 (1984), pp.219-238.

<sup>47</sup>*Ibid.*, pp.188-189.

attacking. States will feel both more protected against others' attacks and less tempted to resort to offensive strategies. A state's increase in defensive capabilities will also be marginally threatening to other states, which will not feel the need to immediately match that increase. Wars will be protracted and can be won only at enormous costs.<sup>48</sup>

The offense/defense balance has a peculiar impact on the possibilities for interstate cooperation in the area of security. When the offense prevails, it is fair to assume that states would have a stronger interest in achieving cooperative agreements that may stabilize their mutual level of security. When, instead, the defense dominates, states are likely to feel more secure and confident in their unilateral strategies, which reduces their incentives for reaching mutual cooperation.<sup>49</sup> Paradoxically, the offense/defense balance works in the opposite way. If, in fact, the balance shifts toward the offense, states' fears of being exploited grows, while the benefits associated with unilateral defection increase. Because under these circumstances the costs of being "suckered" are enormous, states find continuous defection to be safer. The dangers associated with temporary asymmetries in offensive capabilities are substantive. Yet, imbalances can be more easily and rapidly redressed because of the lower costs of acquiring offensive weapons, and arms races become more rational than cooperative agreements. Because offense dominance places a premium on aggressive policies and security through expansion, each state can be almost certain that opponents hold its

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<sup>48</sup>Ibid., pp.187 and 190.

<sup>49</sup>See Glaser, "Realists as optimists," pp.391-393.

same set of preferences. When it is clear that the adversary has a dominant strategy of defection, it becomes irrational to attempt cooperative policies.<sup>50</sup>

The argument is reversed when the balance is in favor of the defense. Defensive weapons and defensive policies reduce a state's fear of exploitation. The benefits of unilateral defection are also limited, since it is likely to be extremely costly to attack an opponent that can still effectively defend itself. States may also be more confident about the intentions of potential opponents. Even if a state has inimical intentions toward another state, the threat posed by the former is limited by the narrow range of offensive objectives allowed by defense-oriented weaponry and by the latter's capacity to increase its defensive capabilities at small costs. Finally, if the defense dominates, states will not feel excessively threatened by other states' increases in capabilities. Defense dominance provides a greater "margin of flexibility" within which states do not feel compelled to immediately respond to each other's acquisition of capabilities. Therefore, even though the superiority of the defense may reduce states' mutual interests in cooperation, it also makes cooperation more feasible by dampening the impact of the security dilemma.

The offense/defense balance influences prospects of interstate cooperation by either reducing or increasing states' relative gains concerns. As Robert Powell has argued, relative gains are likely to matter more when the balance is in favor of the

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<sup>50</sup>See Stein, *Why Nations Cooperate*, pp.69-70.

offense and when military technology makes the costs of warfare reasonably low.<sup>51</sup> In this context, states are forced to constantly take into consideration the possibility that the adversary may resort to the use of force. The likelihood that a state will turn gaps in gains into offensive capabilities, as well as the incentives to take advantage of those offensive gaps, is greater. States will, therefore, have not only a greater fear of being exploited and conceding a relative advantage to the opponent, but also of asymmetrical distribution of gains deriving from mutual cooperation.<sup>52</sup> If it is also assumed that relative gains in other areas are convertible into offensive advantages, and if technology allows a rapid conversion, then states' sensitivity to relative gains will proportionally increase, thus extending the "shadow" of the security dilemma beyond the area of security, making cooperation more difficult in other issue-areas.<sup>53</sup> The opposite argument, instead, can be made when the balance shifts toward the defense. When the defense has the advantage, concerns with relative gains will be reduced by the less severe character of the security dilemma. Furthermore, the faster relative gains can be transformed into defensive advantages, the less states will be preoccupied with them, since rapid conversion limits the likelihood and potential damages of a sudden attack. Again, when the defense prevails, states will have some margin of flexibility within

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<sup>51</sup>See Powell, "Absolute and relative gains in International Relations theory," pp.1304-1306; see also *ibid.*, "Guns, butter, and anarchy," pp.115-132; and *ibid.*, "Anarchy in international relations theory," pp.334-335.

<sup>52</sup>See Powell, "Absolute and relative gains in International Relations theory," p.1313; see also Grieco, "The relative-gains problem for international cooperation," pp.734-735.

<sup>53</sup>See Powell, "Absolute and relative gains in International Relations theory," p.1212.



which they do not need to be concerned with and respond to an adversary's larger relative gains.<sup>54</sup>

Nonetheless, even in regard to the offense/defense balance and its impact on interstate cooperation, the picture is not as straightforward as the argument just presented. Problems of information and perceptions, which are typical of the security area, may interfere and worsen the prospects for collaboration. As indicated by Robert Jervis, it is quite often difficult to distinguish between offensive and defensive weapons. Some weapons may serve both offensive and defensive purposes, according to how they are employed and deployed.<sup>55</sup> Weapon systems can be very ambiguous in nature, and when it is difficult to distinguish between offense and defense, states tend to evaluate the character of weapons and of the opponents' security postures on the basis of perceived intentions. Most of the times, "a weapon can be either offensive or defensive according to which end of it you are looking at."<sup>56</sup> Thus, when ambiguity prevents a clear-cut differentiation between offense and defense, states are not likely to stray from their tendency to overestimate others' inimical intentions and relative power. They will tend to employ the conservative rationality that is typical of this issue-area and abandon qualitative evaluations of power in favor of more cautious, quantitative

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<sup>54</sup>See Powell, "Guns, butter, and anarchy," p.118.

<sup>55</sup>See Jervis, "Cooperation under the security dilemma," pp.201-203.

<sup>56</sup>Ibid., p.201. For a counter-argument to Jervis's claim that perceptions matter in the assessment of the defense/offense balance, see Glaser, "The security dilemma revisited," pp.198-200.

judgements. Relative gains may matter as much as if the offense were dominating, and unilateral defection will be preferred to the dangers of unreciprocated cooperation or asymmetric cooperative agreements.

Whether correctly assessed or grossly misperceived, the offense/defense balance may have disastrous consequences on states' willingness to achieve international cooperation. Again, Stephen Van Evera's analysis of states' behavior in pre-World War I Europe is very illustrative. Before 1914, European states were trapped in the so-called "cult of the offensive," that is, the belief in the superiority of offensive military strategies coupled with the perception that the balance was in favor of the offense.<sup>57</sup> In such a context, the European states felt extremely insecure and came to think that security could be best achieved through expansion. All mutual interests in cooperating disappeared from the states' policy options, and they competed in stimulating each other's insecurities. As previously mentioned, European states feared that opponents would take advantage of windows of opportunities created by even small gaps in capabilities. With such a great faith in the efficacy of the offense, war was deemed highly profitable and inexpensive when compared to the costs of cooperation. Thus, European states were caught in a spiral of defections that, not surprisingly, culminated in a conflict of massive proportions. As Van Evera suggests, pre-1914 technology actually favored the offense over the defense.<sup>58</sup> Yet, the supposed advantage of the

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<sup>57</sup>See Van Evera, "Why cooperation failed in 1914," pp.81-84.

<sup>58</sup>Levy, on the contrary, reports that military analysts seem to agree that the pre-1914 offense/defense balance favored the defense, but that the actual situation was badly

offense was also greatly exaggerated by misperceptions of the balance itself and of other states' intentions.<sup>59</sup>

Cooperation in the area of security is, therefore, complicated not only by problems of scarce information and perceptions, but also by qualitative character of military power and by states' assessment of it. Indeed, the two problems reinforce each other, and they may both concur to worsen the negative impact of the security dilemma on cooperation. For fairness of the argument, it not possible to exclude that either misperceptions, or an offense/defense balance that favor the defense, or both, may be conducive to cooperation. Yet, in an issue-area in which the principal objective - security- is measured in relative terms and can hardly be assessed independently of other states' intentions, such occurrences may be quite rare.<sup>60</sup>

### **Alliances, concerts, and security regimes**

It would be, however, quite unrealistic to state that cooperation never takes place in the area of security. In spite of the security dilemma, not all situations in this realm are zero-sum, and states can find reasons to collaborate with each other. The amount of cooperation taking place in the security area is often misrepresented by the

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misperceived by European politicians and the military authorities of the time. See Levy, "The offensive/defensive balance of military technology," pp.222 and 232.

<sup>59</sup>See Van Evera, "Why cooperation failed in 1914," p.83.

<sup>60</sup>Arthur Stein, for instance, suggests that misperceptions are as likely to be conducive to cooperation as they are to cause conflict. However, he points out that such an occurrence may not be frequent. See Stein, *Why Nations Cooperate*, chap.3.

fallacy of simplistically interpreting cooperation as a choice between attack and restraint. Yet, even when the more complex definition of cooperation as policy coordination in mixed-interest situations is adopted, it is undeniable that states can manage to overcome the security dilemma and collaborate with each other. Alliances, concerts, and security regimes are some of the most evident examples of security cooperation. What distinguishes these forms of cooperation from instances of cooperation in other issue-areas is the number of strict requirements that must be met before they can take place. More specifically, for cooperation to occur in the area of security, it must be in harmony with the relative distribution of power among states and with their concerns about relative gains. As long as cooperative agreements fit into the narrow limits imposed by balance-of-power considerations, and as long as relative gains do not threaten to alter an established status quo, states may be as willing to cooperate in this issue-area as they are to cooperate in other realms.

Alliances, defined as "formal or informal relationships of security cooperation between two or more sovereign states," occur in a context that is not dissimilar from a situation of Prisoners' Dilemma.<sup>61</sup> In the presence of an external threat, states must decide whether to join forces against the threat and be more secure or to attempt to balance individually against it. The presence of the external threat is fundamental for creating a mutual interest where there would be none. The trade-offs in the alliance

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<sup>61</sup>For the definition of alliances, see Stephen Walt, *The Origins of Alliances*, (Ithaca, NY: Cornell University Press, 1987), pp.1 (fn.1) and 12. See also Glenn H. Snyder, "Alliances, balance, and stability," *International Organization*, Vol.45, No.1 (1991), p.123.

game are between greater security and loss of some degree of autonomy. Each state would like to be able to internally balance against the threat without committing to an agreement with another state. However, this is not always possible, and each state faces the danger of remaining either less secure or completely isolated. As Glenn Snyder suggests, in the process of alliance formation, states face two successive Prisoners' Dilemmas. The first, the "alliance game," concerns the choice of the allies and the actual formation of the alliance. The second, the "adversary game," involves decisions regarding the level of commitment to the alliance and the choice of whether to cooperate with or defect on the external threat. The two games intersect in a broader Prisoners' Dilemma and influence each other. The stronger a state's commitment (cooperation) in the alliance game, the more that state is likely to defect in the adversary game, and viceversa.<sup>62</sup>

Analyzed in this perspective, alliances conform to balance-of-power behavior in that they represent responses to asymmetric distribution of power in the international system. The consequences of the formation of such defensive alliances for interstate cooperation is that the constraints imposed by the security dilemma are reduced among allies and projected into the "external" adversary game. Members of an alliance, to be sure, will always fear the abandonment of their partners. Yet, the decrease of the "internal" security dilemma works in favor of the establishment of broader cooperative

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<sup>62</sup>See Glenn H. Snyder, "The security dilemma in alliance politics," *World Politics*, Vol.36, No.4 (1984), pp.462-470; see also *ibid.*, "Alliances, balance, and stability," p.125.

patterns among the member states. In particular, alliances reduce relative gains concerns motivated by security considerations. Relative gains concerns do not disappear among allies.<sup>63</sup> The allies of today may still be the enemies of tomorrow. Yet, the greater urgency of the external security dilemma is likely to “soften” each member’s sensitivity to relative gains.<sup>64</sup> The achievement of greater relative gains, especially on the part of the weaker partners, may even be welcomed as long as they increase the overall strength of the alliance vis-a-vis the opponent. The fact that free trade and other forms of cooperative agreements are more frequent among allies is often adduced as evidence that relative gains constraints are limited where the security dilemma is less severe.<sup>65</sup>

What follows is that defensive alliances generated by balancing behavior tend to last as long as the external threat is present, and as long as the internal equilibrium is not altered by relative gains dynamics. Alliances are not immune from the negative dynamics that make any form of collective action problematic. The weaker members enjoy greater returns in terms of security and are tempted to free-ride, while the stronger members overpay for their security benefits and are likely to witness an erosion of their power. The alliance is likely to endure to the extent to which this

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<sup>63</sup>See Jervis, “Realism, game theory, and cooperation,” p.335.

<sup>64</sup>See Grieco, “Realist theory and the problem of international cooperation,” p.611.

<sup>65</sup>See, for instance, Joanne Gowa, “Bipolarity, multipolarity, and free trade,” *American Political Science Review*, Vol.83, No.4 (1989), pp.1245-1256; see also Joanne Gowa and Edward G. Mansfield, “Power politics and international trade,” *American Political Science Review*, Vol.87, No.2 (1993), pp.408-420.

problem is internally resolved. If, however, the external threat is weakened, and the stronger members' relative power declines, the alliance is likely to break apart. This occurs for two reasons. First, the stronger, but declining members become more sensitive to relative gains concerns. Second, the weaker states, who have now achieved greater power, opt for autonomy.<sup>66</sup> Therefore, insofar as it works in favor of the preservation of each member's relative position, the alliance is likely to remain stable. When, on the contrary, the positionality of the members is in danger of being altered by the internal dynamics of the alliance, the agreement is not likely to endure.

That alliances, as a form of security cooperation, take place and endure if balance-of-power and relative gains dynamics are "satisfied" is also confirmed by the fact that offensive alliances motivated by bandwagoning behavior are rare occurrences and are usually short-lived.<sup>67</sup> Contrary to balancing behavior, in bandwagoning states flock toward the source of threat. They do so for two reasons. First, weaker states may attempt to appease the threatening, more powerful state. Second, they want to acquire a greater share the benefits by siding with the power most likely to win.<sup>68</sup> However, such behavior clearly runs against the constraints created by the security dilemma and by relative gains considerations. By choosing the stronger side, bandwagoning states opt for maintaining the existing asymmetry in power rather than

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<sup>66</sup>See Walt, *The Origins of alliances*, pp.20-21.

<sup>67</sup>Ibid., p.263.

<sup>68</sup>Ibid., p.21.

redressing it. They run an enormous risk of being “suckered” by the stronger state in exchange for a vague possibility of achieving greater individual gains. In such alliances, the internal security dilemma is not eased by the presence of an external threat. Smaller states continue to be insecure, while the dominant power will not trust its partners and will be extremely sensitive to the erosion of its relative power vis-a-vis the weaker allies. Thus, because bandwagoning alliances do not conform to, but rather amplify the basic problems that mar cooperation in the security area, they experience great instability and feebleness.

A similar logic applies to other forms of security cooperation, such as security regimes and concerts. Concerts have been rare historical occurrences that have taken place after major wars against a hegemonic state. Counter-hegemonic wars temporarily solve major imbalances in the distribution of power and leave a small group of approximately equal states in a dominant position.<sup>69</sup> Under these circumstances, the security dilemma is still present, but its effects are moderated by the fact that each member of the concert has a particular interest in maintaining the current balance and avoiding the formation of a coalition by the other members. The context in which a concert takes shape places great benefits on cooperative outcomes and reduces those associated with defection. As long as the member states are interested in preserving their favorable position, there are few incentives in trying to exploit temporary and marginal gaps in capabilities. Those states are likely to exercise unilateral restraint and

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<sup>69</sup>See Robert Jervis, “From balance to concert: A study of international security cooperation,” *World Politics*, Vol.38, No.1 (1985), p.60.



to adopt defense-oriented posture that reduce other members' fears of exploitation.<sup>70</sup> Restraint and defense-dominance increase internal transparency, communication, and effective monitoring of others' actions. Reciprocity is, therefore, likely to be effective and common expectations about mutual cooperation may develop.<sup>71</sup> Yet, as Jervis indicates, concert systems tend to decay as the unusual post-war situation is altered by passage of time and erosion of some of the member states' power. When this occurs, traditional balance-of-power dynamics and relative gains considerations are likely to resurface, thus bringing the coalition to an end.<sup>72</sup>

Similar peculiar conditions need to exist for security regimes to develop and, indeed, concerts are often considered as one of the many forms of security regimes.<sup>73</sup> In the area of security, the formation of regimes is generally supported by the presence of great, status-quo powers. These stronger states, beside being fairly satisfied, must share similar definition of security and similar security requirements. If one or more revisionist states are present, and they believe that security is best achieved through expansion, it is unlikely that a regime will form. All of these requirements are more easily met when the offense-defense balance is tilted in favor of the defense, and when

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<sup>70</sup>See Jervis, "From balance to concert," pp.62-64.

<sup>71</sup>*Ibid.*, pp.73-75.

<sup>72</sup>*Ibid.*, p.61.

<sup>73</sup>See Robert Jervis, "Security regimes," *International Organization*, Vol. 36, No.2 (1982), pp.362-365.

offense and defense are clearly distinguishable.<sup>74</sup> However, as it occurs in the case of concerts, regime formation is hindered by the absence of any one of these factors. Similarly, when one of these elements is no longer present, existing security regimes are likely to decay. When, in fact, the security dilemma regains strength, and member states return to the more typical concerns about distribution of relative power and relative gains, the mutual interest in cooperation upon which the regime was based will rapidly disappear.

Security regimes, as well as regimes in general, are peculiar forms of cooperation that deserve a much more detailed analysis than the one that can be offered here. Yet, security regimes are useful examples of the difficulties that the security dilemma and consideration about relative power create for cooperation in the area of security. The greater competitiveness inherent in the security area enlarges the number of conditions that need to be present for regimes to form, and it is not a case that regime formation in the area of security is quite an unusual phenomenon and not as frequent as in other issue- areas.<sup>75</sup> The same argument applies to alliances and concerts. States can reach security cooperative agreements that are something more than simple coordination, but the severity of the security dilemma and the particular character of the goal at stake, i.e., survival, set the boundaries between what can and what cannot be achieved.

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<sup>74</sup>See Jervis, "Security regimes," pp.361-363.

<sup>75</sup>Ibid., pp.358-359.

## Final considerations

In evaluating the possibility of cooperation in the area of security, Robert Jervis perfectly summarizes the various arguments that have been here presented, stating that

The primacy of security, its competitive nature, the unforgiving nature of the arena, and the uncertainty of how much security the state needs and has, all compound the Prisoners' Dilemma and make it sharper than the problems that arise in most other areas.<sup>76</sup>

Because the realm of security is dominated by security dilemma, and because of the overwhelming importance states logically attribute to survival, cooperation in the area of security is clearly more difficult to achieve than in other sectors of international politics. More than other issues at stake in different areas of interaction, security is measured by states in relative terms. Even though they are distinguishable for analytical purposes, power as a means and security as an end can hardly be untangled when we explore the topic of cooperation in this issue-area. Because of the relative nature of power and of security, states are not in the condition to overlook the problem of relative gains in deciding whether to cooperate with other states or not.

It is possible to "dissect" the area of security and look at the problem of cooperation through the various components that come into play in states' interactions. Absence or occurrence of cooperation and the impact of relative gains considerations can be explained by considering the identity of the actors involved, their notions of security, the availability or lack of information, the problem of perceptions, the offense/defense balance, patterns of amity and enmity, and whether the actors tend to

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<sup>76</sup>Ibid., p.359.

be status quo or revisionists in character. Yet, great attention to specific components of the security area, especially if they are considered in isolation from each other, is likely to lead to the conclusion that states care about relative gains only under specific circumstances, and that the impact of relative gains on interstate collaboration can be explained by these specific circumstances.

What this approach actually explains are variations in degrees of relative gains concerns and of their context-specific influence on particular instances cooperation. What is lost is the question of why states care more about relative gains in the realm of security than in other areas. On this point, Jervis is correct in indicating that we need to look no further than the security dilemma in order to understand states' general preoccupation with relative gains. Emphasis on the relative nature of power and on the security dilemma is sufficient for providing a parsimonious explanation of the impact of relative gains concerns on security cooperation. Context-specific elements constitutes additional explanatory layers that deepen our knowledge of the topic, but they are not to be confused with the broader theory. As Grieco points out, in the area of security

[The] combination of high uncertainty about the efficacy of force and low tolerance for risk about that subject is likely to cause states to worry about gaps in gains advantaging partners to some degree even if they believe that at present the use of force between them is not at issue.<sup>77</sup>

Because of the relative character of power, positionality determines how much security states can enjoy. The security dilemma tells us that positionality is always called into question in this issue-area. Because they immensely value security, states

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<sup>77</sup>See Grieco, "The relative-gains problem for international cooperation," p.734.

act as positional actors in the security area, and they do so more than in other issue-areas. Even if many instances of interaction in the realm of security are not necessarily zero-sum situations, it is the orientation with which the actors enter in those interactions that makes them zero-sum. In the security realm, states act positionally and employ a peculiar conservative rationality, because they are aware that their relative position determines whether the goal at stake can be reached or not. When positionality matters in achieving a particular goal, relative gains concerns strongly affect the possibility of cooperation. As the analysis of alliances and other forms of security cooperation shows, cooperation under the security dilemma occurs when it is compatible with concerns about positionality, while it does not materialize when it clashes against such concerns. Therefore, analysis of cooperation in the security area raises the question as to whether relative gains concerns may affect cooperation in other issue-areas in which a state's relative position is essential for achieving the major goals that are specific to those sectors.

## CHAPTER IV

### RELATIVE GAINS IN THE ECONOMIC AREA

Michael Mastanduno reports that in 1990, during a series of meetings, the following question was posed by a Harvard professor to groups of graduate students, American corporate executives, bankers, State Department officials, professional economists, and ordinary citizens: Which future world would be preferable to the United States? One in which the U.S. economy grows at 25 percent over the next decade, and the Japanese economy grows at 75 percent, or one in which the American economy grows at 10 percent, while Japan grows at 10.3 percent? With the exception of the economists, the majority of each group chose the latter scenario.<sup>1</sup>

The question, and the answers to it, are quite intriguing. Unlike the area of security, international economy is usually considered a sector in which relative gains constitute only a marginal concern. As previously mentioned in several occasions, neoliberal theorists believe that, when they interact in the economic area, states are mainly concerned with absolute gains. Because prosperity is not a relative good, neoliberals claim, states can increase their wealth without harming each other. Even more important, cooperation is an essential means by which they can improve their welfare. The absence of relative gains concerns explains, to a large extent, the great amount of interstate collaboration that is observable in this issue-area. Neoliberals

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<sup>1</sup>See Michael Mastanduno, "Do relative gains matter? America's response to Japanese industrial policy," *International Security*, Vol.16, No.1 (1991), p.73.

insist that states' preoccupation with relative gains tends to be confined to the security realm, and that the patterns of interaction typical of the economic sector better reflect the ways in which states deal with each other in the international arena in regard to cooperation. The economists who responded to the question reported by Mastanduno seem to adhere to this perspective.

How to explain, then, the answers provided by members of the other groups? Do states actually behave like the above-mentioned bankers, executives, and state officials, and care about relative gains also in the economic area? To the neoliberals' emphasis on the distinction between the economic and the security area, neorealists respond that states care about economic relative gains because these gains can be converted into security advantages. States are concerned with survival and, because of the "security externalities" of economic cooperation, they cannot afford to act like absolute gains maximizers.<sup>2</sup> Neorealists recognize that in the economic area, states' coefficient of sensitivity to relative gains will be less than in the security realm, but they claim that it will always be greater than zero.<sup>3</sup> As pointed out in the preceding chapters, neoliberals and neorealists have recently been putting great effort in determining what factors dampen or ameliorate the impact of security externalities on cooperation in general, and on economic cooperation in particular.

Yet, in spite of its attention to the peculiarities of the strategic context, the joint

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<sup>2</sup>See Gowa, "Bipolarity, multipolarity, and free trade," p.1248.

<sup>3</sup>See Grieco, "Anarchy and the limits of cooperation," p.501.

approach of neoliberalism and neorealism does not manage to provide all of the answers about relative gains and cooperation in different issue-areas. Should the United States be concerned with Japan's relative gains -as suggested by the bankers, corporate executives, and state officials in Mastanduno's article- because they can be converted into security advantages? Or is it because wealth is perceived to be a relative good like security? Indeed, the recent literature about cooperation in the economic area and its connection to security is filled with contradictory examples of successful collaboration in the presence of conspicuous security externalities, and instances in which preoccupation with relative gains hampers cooperation even when no evident, immediate security concerns exist.<sup>4</sup> Often without making much effort to reconsider their position, neoliberals and neorealists "manipulate" these anomalous cases to claim, respectively, that states care principally about absolute gains and welfare, and that states are driven by long-term concerns with survival and with the cumulative effects of relative gains.

It thus appears that the problem of establishing the degree of convertibility of some particular gains within some specific strategic context is all that remains of the original neoliberal/neorealist debate about relative gains and cooperation. The possibility that the aforementioned atypical cases actually represent anomalies for both theoretical perspectives, and that states may be concerned with economic relative gains

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<sup>4</sup>See, for instance, Mastanduno, "Do relative gains matter?" pp.84-108; Peter Liberman, "Trading with the enemy: Security and relative economic gains," *International Security*, Vol.21, No.1 (1996), pp.158-173; Grieco, *Cooperation Among Nations*, especially chap.7.



for reasons other than their convertibility into security advantages, is seldom addressed. Yet, the idea that states may believe that wealth is as relative as security, and that they may act in conformity with such a belief has been a part of International Political Economy (IPE) theory since the age of mercantilism.<sup>5</sup>

It is undeniable that states are concerned with economic gains and losses because economic power is one of the many dimensions of a state's aggregate power, and because it enhances a country's military power.<sup>6</sup> However, the relative economic power of a state matters for two additional reasons that are more closely related to wealth as a national objective, and only indirectly related to security concerns. First, a country's economic power may be used as instrument of foreign policy and as a means for projecting and increasing a state's influence over other nations.<sup>7</sup> Second, and most important, since "the material benefit derived from international trade is not necessarily divided equally between the various trading nations," the relative position of a state in the economic realm matters because it may influence the bargaining power of that state, and because it may determine the outcomes of economic transactions and the distribution of the gains arising from interstate cooperation.<sup>8</sup>

This is clearly not to say that wealth is as relative a good as security. In the

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<sup>5</sup>See Albert O. Hirschman, *National Power and the Structure of Foreign Trade* (Berkeley, CA: University of California Press, 1945), especially chap.1.

<sup>6</sup>See Hirschman, *National Power and the Structure of International Trade*, p.14.

<sup>7</sup>*Ibid.*, pp.13-17.

<sup>8</sup>*Ibid.*, pp.10-11.

area of international economy, “the gain of one nation is not necessarily the loss of another,” and cooperation tends to benefit all the participating states.<sup>9</sup> Yet, states may perceive wealth as if it were a relative asset. As Stein indicates, “an actor’s orientation, its emphasis on relative or absolute position, affects how it assesses a given situation,” and quite often “nations focus not only on the absolute gains from trade but on relative ones as well. They may be wary of agreements that hold out greater returns for others than for themselves.”<sup>10</sup> Therefore, even if economic interactions among states are almost never zero-sum in themselves, it is the orientation with which states approach them that may transform them into situations of conflict. States are likely to care about economic relative gains because a state’s position vis-a-vis other nations may influence the degree of welfare that can be achieved. When relative gains and positionality are perceived to be of strategic importance for the attainment of a key national objective, states tend to see more conflict in a given situation related to that goal than they would otherwise.

As will be seen, the contextual characteristics of the international economic area make collaboration easier to achieve in this sector than in other realms of interaction. It would be an exaggeration to claim that economic relative gains matter in equal measure under all circumstances. Asymmetries between actors, their degree of competitiveness, the economic sector in which an interaction takes place, the degree of

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<sup>9</sup>Ibid., p.5.

<sup>10</sup>See Stein, *Why Nations Cooperate*, pp.136-137.

convertibility of particular goods into substantive advantages, and the security externalities those goods carry with themselves influence the extent to which states are concerned with economic relative gains in specific instances of interaction.

Nonetheless, from the analysis of these variables, the general theoretical argument can be derived that, in regard to relative gains and cooperation, states are likely to behave in the economic sector in the same way as they do in the realm of security. That is to say, states will be concerned with relative gains when relative advantages and losses are likely to immediately compromise their position vis-a-vis other states.

### **Features of the international economic area**

The argument made in chapter III about how the peculiarities of the security realm make such an environment unfavorable to interstate cooperation is usually reversed in regard to the area of international economy. In the economic sector, contextual characteristics can be said to be conducive to collaboration among states because they more closely resemble the environment of Axelrod's tournaments of Prisoners' Dilemma in *The Evolution of Cooperation*. In the first place, because the objective at stake, i.e., wealth, is not zero-sum in nature, the payoff structure of the games used as models tend to be less severe and less prone to relative gains considerations on the part of the actors. Second, because elimination from the game is not an issue in the economic area, and because economic relations among states tend to be ongoing, iteration and the "shadow of the future" work in favor of cooperative

outcomes. Finally, because monitoring and sanctioning are likely to be easier in this issue-area, strategies based on reciprocity will be more successful and will foster the emergence of cooperation and the diffusion of reciprocity as a norm of behavior.

As in the security realm, the problem of interstate cooperation in the economic area is generally modeled as a game of Prisoners' Dilemma, even though it is not to be excluded that some economic interactions may be also represented as games involving "relatively simple coordination or mutually beneficial exchange."<sup>11</sup> The main features of games of PD in the economic sector are that: 1) wealth, as the principal objective of states' interaction, is not a relative good; and 2) actors are not in danger of being eliminated from the game. In most circumstances of economic interaction, actors stand to gain from reciprocal collaboration, and losses associated with unreciprocated cooperation are not likely to be as devastating and irreparable as in the security realm.<sup>12</sup> CC - DD differentials tend to be large, while perceived rewards from unilateral defection and perceived risks of asymmetric cooperation, that is, DC - CD differentials, are likely to be small.<sup>13</sup> Thus, economic issues "usually seem to exhibit less conflictual

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<sup>11</sup>See Lipson, "International cooperation in economic and security affairs," p.12. On the issue of modeling the problem of interstate cooperation in the area of international economy, see also John A. C. Conybeare, "Public goods, Prisoners' Dilemma and the international political economy," *International Studies Quarterly*, Vol.28, No.1 (1984), pp.5-22, especially pp.6-10.

<sup>12</sup>*Ibid.*, p.14.

<sup>13</sup>See Oye, "Explaining cooperation under anarchy," p.5; also John Gerard Ruggie, "International regimes, transactions, and change: Embedded liberalism in the postwar economic order," in *International Regimes*, Stephen D. Krasner, ed. (Ithaca, NY: Cornell University Press, 1983), pp.195-232.

payoff structures than do those of military security,” regardless of whether we consider the objective payoff structure or that subjectively perceived by the actors.<sup>14</sup> As observed before, the less severe the payoff structure, the less players are concerned with payoff differentials and relative gains, and the more cooperation is likely to be achieved.<sup>15</sup>

According to Axelrod and Keohane, “the dimension of the shadow of the future seems to differentiate military from economic issues more sharply than does the dimension of payoffs.”<sup>16</sup> The fact that survival is not an issue of concern in economic affairs makes iteration more likely and this, in turn, promotes the beneficial extension of the “shadow of the future” on current interactions. Since “the danger of swift, decisive defection simply does not apply in most international economic issues,” states can expect to encounter and interact with each other again in the future.<sup>17</sup> When the prospects of iteration are substantive, the actors’ concerns with defection in current transactions will be reduced, and potential payoffs from future cooperation will be highly valued. As described at length in the preceding chapters, mutual collaboration will be more easily achieved when the game of PD is iterated, and when the “shadow of the future” considerably affects the actors’ strategic approach to the game.

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<sup>14</sup>See Axelrod and Keohane, “Achieving cooperation under anarchy,” p.231.

<sup>15</sup>See Lipson, “International cooperation in economic and security affairs,” pp.7-8.

<sup>16</sup>See Axelrod and Keohane, “Achieving cooperation under anarchy,” p. 232.

<sup>17</sup>See Lipson, “International cooperation in economic and security affairs,” p.17.

Since economic relations tend to be iterated, and because losses caused by unreciprocated defection may not be irreversible, employing nice, retaliatory strategies is both rational and potentially profitable. In an environment in which the object at stake is not zero-sum in nature, and in which defection may not bring substantive advantages, each player can assume that others will adopt nice strategies as well. Even if other players choose to defect, retaliation in the economic area is likely to be easier and more successful than in the security realm.<sup>18</sup> With a few exceptions, economic affairs tend to have much greater transparency than security affairs. Secrecy and strategic deception may not be viable tactics in this context. The meaning of cooperation and defection is also likely to be more straightforward in economic affairs, making it easier to distinguish between the two strategies. Therefore, since informational problems are less severe in this issue-area, monitoring and sanctioning tasks will be comparatively more manageable, which further discourages the adoption of a dominant strategy of defection, improves the “shadow of the future,” and favors reciprocity.<sup>19</sup>

In addition, retaliation in the economic area is likely to be less dangerous, less costly, and more efficient than in the area of security. Actors who have been cheated in this environment may not have received losses so devastating that their ability to retaliate in future rounds is completely compromised. With the exception of a few

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<sup>18</sup>See Axelrod and Keohane, “Achieving cooperation under anarchy,” pp.232-233.

<sup>19</sup>Ibid., pp.234-236.

extreme cases, retaliation in economic issues is not likely to involve mobilization of forces, the “spiral dynamics” of arms races, escalation of conflict, crisis situations, and the danger of an all-out war. The retaliating party will pay the cost of not enjoying the benefits of a future cooperative transaction, but it is also likely to recover from those short-term losses if it manages to “sucker” the opponent and, eventually, force it into a cooperative pattern. Moreover, in the economic area actors do not experience those problems related to the timing of retaliation that were observed in the security arena. Since elimination is not part of the economic game, players may retaliate at a later occasion. Having greater time at one’s disposal allows actors to ascertain whether defection has indeed occurred; it allows them to recover strength before actually retaliating; and, it allows the defector to change course of action even before retaliation. As Lipson points out, the “luxury of time” allows actors to play the economic game sequentially rather than simultaneously, and because sequentiality reduces problems of transparency and the fear of immediate peril, actors are more likely to move toward mutual accommodation.<sup>20</sup>

To summarize, the area of international economy is generally depicted as being less dangerous and unforgiving than the security realm. Because welfare is not a zero-sum objective, and because economic affairs do not contemplate the risk of elimination, this issue-area is less prone to conflict and more conducive to cooperation. The

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<sup>20</sup>See Lipson, “International cooperation in economic and security affairs,” p.17. See also Conybeare, “Public goods, Prisoners’ Dilemma and the international political economy,” p.16.

existence of a large number of economic regimes and institutions is usually considered to be both a cause and a result of the fact states find it easier and more profitable to collaborate in the realm of international economy.<sup>21</sup> Neoliberals in particular point to the fact that the less conflictual character of the economic area, the smaller weight that states place on relative gains, and the presence of many economic regimes and institutions help states to develop common expectations about others' cooperative behavior. When and if such common expectations, and especially those concerning the norm of reciprocity, are "internalized" by the actors, patterns of cooperation are reinforced and expanded.<sup>22</sup> Furthermore, assimilation and institutionalization of norms of cooperation in the economic sector set the foundations for the creation of positive issue-linkages that may help states to connect dissimilar games across different issue-

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<sup>21</sup>As John Gerard Ruggie indicates, the tendency to use the existence of regimes and institutions for explaining economic cooperation has indeed led to much theoretical confusion. Can economic regimes and institutions be considered as pre-existing entities that act as independent variables? Or are they a consequence, rather than a cause, of cooperation? The problem is not dissimilar from that of treating relative gains as either independent or dependent variables in regard to interstate cooperation. As Ruggie suggests, it is arguably more fruitful to regard regimes and institutions as intervening variables, which are not fully determinative and which ultimately need to be explained by looking at the behavior of the states that created them. See Ruggie, "International regimes, transactions, and change," p.199; also Charles Lipson, "The transformation of trade: The sources and effects of regime change," in *International Regimes*, Stephen D. Krasner, ed. (Ithaca, NY: Cornell University Press, 1983), pp.233-234.

<sup>22</sup>See, for instance, Axelrod and Keohane, "Achieving cooperation under anarchy," pp.234-237; Keohane, "Reciprocity in international relations," pp.1-8; Lipson, "International cooperation in economic and security affairs," p.12; and Oye, "Explaining cooperation under anarchy," p.11.



areas and foster the spread of cooperation to other realms of international interaction.<sup>23</sup>

However, interstate relations in the economic area do not quite live up to the expectations developed by the game theoretical approach. Even though it is undeniable that states in this realm cooperate to a larger extent than in other issue-areas, economic collaboration does not appear to evolve as smoothly as generally hypothesized. The sheer volume of economic interactions among states may be often quite misleading. Even in the sector of international economy states find reasons for being preoccupied with relative gains and eschew cooperation. The literature on the subject seems to offer a plethora of examples of cooperative agreements undermined by relative gains concerns and an equal amount of successful interactions. Indeed, the economic area offers as many causes of conflict as incentives to cooperate. Neorealist authors tend to emphasize the role of security externalities in explaining the concerns of states with economic relative gains. Yet, with the exception of a few obvious cases, neorealists find it difficult to establish a clear connection between relative gains considerations and failed cooperation in most instances of economic transaction. Quite often, in trying to identify security-motivated relative gains conflicts, neorealist authors have in fact stumbled upon conflicts motivated by concerns over economic competitiveness and prosperity.<sup>24</sup> Analysis of the problem of asymmetries among actors and of the nature of the goods involved in particular economic interactions suggests that states may be

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<sup>23</sup>See Axelrod and Keohane, "Achieving cooperation under anarchy," pp.239-242.

<sup>24</sup>See Liberman, "Trading with the enemy," pp.156-157.

concerned with economic relative gains because positionality matters in the economic area as much as it does in the security arena. Problems of security externalities clearly exist in some instances, but they need not to be extended to the entire economic realm. As it will be seen, when security externalities interfere with concerns of economic relative gains, the effect is extremely negative for cooperation of any sort.

### **Asymmetries among actors and economic cooperation**

Unlike players in simulated tournaments of Prisoners' Dilemma, actors in international politics differ in size and in the amount of power they hold. The existence of asymmetries among actors has far-reaching implications for interstate cooperation in the economic area. Similar to what occurs in the security arena, in the economic sector equal degrees of economic power among states appear to be a good predictor of competition and concerns with relative gains. States tend, in fact, to worry about their most immediate competitors, and actors whose economies have approximately the same size pay greater attention to each other's gains than actors involved in asymmetrical relationships. Ample differences in economic strength, instead, seem to work in favor of cooperation. This occurs for two basic reasons. First, smaller states are more willing to collaborate with bigger ones because their returns from mutual cooperation are comparatively larger.<sup>25</sup> Second, more powerful states are often able to

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<sup>25</sup>See Stephen Krasner, "State power and the structure of international trade," *World Politics*, Vol.28, No.3 (1976), p.319; Hirschman, *National Power and the Structure of Foreign Trade*, chap.2; see also Arthur A. Stein, "The hegemon's dilemma: Great Britain, the United States, and the international economic order," *International*

impose cooperation on weaker states. Thus, even in the economic realm relative differences in power among states epitomize the problem of relative gains and illustrate the fact that this problem originates in states' concerns with positionality.

Game theory manages at times to include the element of asymmetries in its models and to offer a parsimonious explanation of their impact on interstate cooperation. Yet, such explanations often fail to provide the entire picture. When in fact there are differences in size among actors, game theoretical approaches postulate that the stronger party, being fairly indifferent to both mutual cooperation and mutual defection, will defect so as to extract the largest possible gain from the weaker partner.<sup>26</sup> In real economic transactions among states it appears, instead, that asymmetries favor mutual cooperation. States that are economically more powerful seem to be less interested in defection because they have the means to extract a greater share of benefits from mutual cooperation with smaller countries.<sup>27</sup> As long as the relative position of the two partners is not altered, the stronger state may also be willing to make unilateral concessions so as to obtain the collaboration of the smaller state.<sup>28</sup> States with weaker economies, on the other hand, have two basic reasons for

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*Organization*, Vol.38, No.2 (1984), pp.355-386.

<sup>26</sup>See, for instance, Conybeare, "Trade Wars," pp.148-149; also *ibid.*, "Public goods, Prisoners' Dilemma and the international political economy," pp.11-12. On the issue of asymmetric games, see Stein, *Why Nations Cooperate*, chap.3, and especially pp.76-83.

<sup>27</sup>See Hirschman, *National Power and the Structure of Foreign Trade*, p.11.

<sup>28</sup>See Stein, "The hegemon's dilemma," pp.381-386.

going along with asymmetrical cooperation. First, they have a greater degree of dependence on the economy of the more powerful partner.<sup>29</sup> Second, as Hirschman points out, economic gains from mutual cooperation have not only an objective value, but also a subjective one. Even though a weaker state is receiving a smaller share of the benefits, this smaller share may be subjectively more important to its limited economy than the greater share is to the stronger state.<sup>30</sup> As mentioned above, smaller states are likely to get comparatively larger returns from economic cooperation than stronger powers. Indeed, in asymmetrical economic relationships both partners may be equally satisfied with skewed cooperative outcomes.

The game theoretical approach is better suited to provide an explanation of the second reason for which we may expect cooperation in asymmetrical economic relationships. Game theory, in fact, predicts that in instances in which weaker states are unwilling to collaborate because they feel they are receiving an unfair share of the benefits, stronger economic powers generally have the means to prevent defection by increasing the weaker countries' costs of defection, "while holding constant or even reducing their own costs at DD."<sup>31</sup> When this occurs, the stronger country threatens to transform a game of Prisoners' Dilemma into games of Called Bluff or Bully, in which

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<sup>29</sup>Ibid., p.16.

<sup>30</sup>Ibid., pp.20-21.

<sup>31</sup>See Conybeare, "Trade wars," p.149.

the weaker state prefers being “suckered” to mutual defection (i.e.,  $CD > DD$ ).<sup>32</sup> As Conybeare indicates, such situations are likely to occur when weaker countries miscalculate their ability to influence a stronger partner, when they deem the conflict to be inevitable, or when they believe that defection is necessary to maintain credibility. If these situations actually degenerate into real trade wars, “asymmetry may foster cooperation once the weaker power has been punished enough to prefer compromise to further resistance.”<sup>33</sup> Thus, contrary to Axelrod’s prediction, cooperation in these instances ensues because the asymmetrical relationship between actors does not allow the weaker side to retaliate in return. Cooperation under these circumstances is clearly imposed on the less powerful state and not spontaneous. It can indeed be said that smaller countries are being coerced into a pattern of cooperation, and it would be fair to raise the question of whether we can define such an outcome as real collaboration. Yet, in game theoretical terms we are still facing a CC solution of the interaction, and such an outcome is achievable because existing asymmetries in economic power prevent the smaller actor from pursuing a policy that may alter the existing balance.

Conversely, preoccupation with relative gains increases as the relationship between the actors becomes progressively more symmetrical. The argument in this case is not dissimilar to that advanced for the security area. As with security competition, economic competition is likely to be more intense between two actors of

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<sup>32</sup>Ibid., p. 162; see also *ibid.*, “Public goods, Prisoners’ Dilemma and the international political economy,” pp. 17-18.

<sup>33</sup>See Conybeare, “Trade wars,” p. 170.

similar size. Cooperation among two actors of equal power is likely to be sustained only if the fear of defection is low, and if gains from cooperation are equally distributed. As the case of asymmetric relationships shows, relative economic advantage is fundamental in determining a state's bargaining position in a cooperative agreement and its ability to effectively retaliate in case of defection. Even if the damages caused by defection in the economic area may not be irreparable, a state that is "suckered" is likely to see its bargaining position and competitiveness weakened in successive interactions. Relative losses may, therefore, bring about future greater losses.<sup>34</sup> While it may be fairly marginal when there is great disparity among two actors, this danger is likely to be of great concern for two states that are close competitors. For the same reason, actors of similar power will fear an asymmetrical distribution of gains from cooperation. Under these circumstances, even the smallest inequality in the division of those benefits may allow a state to break away from the delicate situation of parity and achieve greater competitiveness. Unless the returns from cooperation are perfectly distributed in proportion to the actors' size, so that the status quo will not be altered, cooperation is not likely to ensue in this scenario.

Jonathan Tucker has eloquently illustrated this point in his "partners-and-rivals" (PAR) model.<sup>35</sup> According to Tucker, states derive two sorts of payoffs from economic cooperation: welfare payoffs and positional payoffs. In economic

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<sup>34</sup>See Matthews, "Current gains and future outcomes," p.125.

<sup>35</sup>See Jonathan B. Tucker, "Partners and rivals: A model of international collaboration in advanced technology," *International Organization*, Vol.45, No.1 (1991), pp.83-120.

collaboration, two actors are likely to both receive positive welfare payoffs. However, because of the principle of increasing returns to scale, positional payoffs are inversely related to the actors' size, that is, the returns will be proportionally greater for the weaker actor.<sup>36</sup> The marginal value of positional losses for the stronger partner is not constant, but varies as a function of the gap in economic capabilities between the two partners. As long as the gap is large, the more powerful state will be more interested in welfare payoffs and will tend to perceive "each increment of loss in its relative position as merely a drop in the bucket."<sup>37</sup> However, as the gap in capabilities is progressively reduced, the two partners move from a so-called "security zone" to a "transition zone," in which the stronger partner "perceives the weaker player as a potential competitor and thus begins to defend its relative position."<sup>38</sup> To summarize, there is a reverse interaction between welfare and positional payoffs. When there is great disparity between the actors, the stronger player pays low positional costs, but it also receives low welfare benefits. When differences between the two actors are small, welfare payoffs increase for the stronger partner, but so does the marginal value of its positional losses. As Tucker concludes, "when the disparity is negligible, the increasing marginal value of positional losses intensifies the rivalry between the two partners.

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<sup>36</sup>See Tucker, "Partners and rivals," pp.88-89.

<sup>37</sup>Ibid., p.90.

<sup>38</sup>Ibid., p.91.

Contrary to conventional wisdom, then, equals do not make the best partners.”<sup>39</sup>

The problem of asymmetries in bilateral economic collaboration is not dissimilar to the conclusions drawn by more general theories of hegemonic stability, according to which multilateral regimes of free trade come into being when a hegemonic power is willing to assume the positional losses implied in establishing and maintaining economic cooperation with weaker partners. As its superiority is eroded over time, the hegemon will be less and less willing to unilaterally shoulder the costs of multilateral cooperation, and the regime will either collapse or simply function less smoothly than before.<sup>40</sup> The evolution of the General Agreement on Tariffs and Trade (GATT) is often adduced as an example of the way in which economic asymmetries among partners influence economic collaboration. During the 1950s and 1960s, when the U.S. maintained a preponderant economic superiority over other nations, the GATT regime evolved rapidly and worked efficiently. In the midst on the economic recession of the 1970s, as the U.S. power declined, Japan’s economy became increasingly stronger, and the European Community took the place of the individual European nations in the GATT structures, the regime’s progress came to a halt, and the three partners returned to

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<sup>39</sup>Ibid., p.91.

<sup>40</sup>For an overview of the theory of hegemonic stability and its variations, see Keohane, *After Hegemony*, chap.3; Lipson, “The transformation of trade,” pp.253-262; Ruggie, “International regimes, transactions, and change,” pp.201-208; and Stein, “The hegemon’s dilemma,” pp.355-360 and 383-386.



protectionist tactics in the attempt to safeguard their respective economies.<sup>41</sup>

The PAR model is also helpful for understanding how economic cooperation can sometimes be achieved even in the presence of evident security externalities, while it may fail where security considerations do not intrude. In fact, as long as the positional advantage of the stronger partner is not excessively compromised, both in economic and security terms, by cooperation with a weaker actor, the greater power may be willing to overlook security considerations in order to pursue welfare gains. During the 1980s, for instance, the U.S. pursued a policy of partial cooperation with Japan in the co-development of the FSX fighter aircraft, but it firmly rejected economic collaboration in the sector of commercial satellites. Whereas, in fact, the U.S. enjoyed a clear dominance in the area of aircraft technology, the disparity between the two countries was much less evident in regard to commercial satellite technology. To the limited extent to which the U.S. pursued a policy of relative gains in the co-development of the FSX, those relative gains concerns were motivated by economic rather than security considerations.<sup>42</sup> Arguably, had Japan not been an ally in a disadvantaged military position, cooperation on the FSX fighter would have been much harder to achieve. Yet, even though much larger joint benefits were at stake in the case of commercial satellites, and even though there were (allegedly) few or no security

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<sup>41</sup>See Grieco, *Cooperation Among Nations*, chap. 1; Lipson, "The transformation of trade, pp.254-257; and Stein, "The hegemon's dilemma," pp.381-383.

<sup>42</sup>For a detailed synopsis of the two cases, see Mastanduno, "Do relative gains matter?" pp.84-101.

externalities, no agreement was reached between two states that looked at each other more as competitors than as partners.

The issue of asymmetries and their impact on economic cooperation shows that, contrary to the neoliberals' expectations, states' behavior can be motivated by relative gains considerations even in the area of international economy. Yet, by looking at asymmetrical interactions among states, it is possible to see that even neorealists are only partially correct in predicting that economic cooperation may be hindered by security concerns. Even when no security considerations intrude, states are likely to be concerned with economic relative gains if relative gaps interfere with their pursuit of welfare. Because of the interdependent character of international economy, relative losses may cause a decrease in autonomy and competitiveness.<sup>43</sup> States fear asymmetrical interdependence because imbalanced economic relationship are likely to translate into economic and political vulnerability.<sup>44</sup> Such concerns are clearly in contradiction with the economic rationality that states are assumed to employ in the traditional game theoretical models. Even in the economic area, states are likely to adopt the conservative rationality that we have observed in the security realm. And they are much more likely to do so when their relative position is in immediate danger, as it occurs in the case of two competitors of approximately equal size. Even though this defensive orientation on the part of states does not transform economic interactions

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<sup>43</sup>See Liberman, "Trading with the enemy," p.158.

<sup>44</sup>See Mastanduno, "Do relative gains matter?" p.80.

into pure zero-sum games, it is nonetheless sufficient to make economic cooperation more difficult than usually predicted.

### **Sectoral competition and relative gains**

A different approach to the problem of cooperation and relative gains in the area of international economy involves looking at the different sectors of states' economies rather than at the systemic distribution of economic power. Economic sectors offer an interesting intervening variable that allows us to hypothesize that states may be more concerned with relative gains in peculiar areas of economic production. This approach is complementary with, rather than alternative to, the explanation provided in the previous section. In fact, economic competition among states is likely to be more intense in some areas where positionality is more directly at stake, and where short-term relative differences may result into long-term, substantive economic losses. If one is interested in achieving greater analytical specification, the general argument presented in regard to the problem of asymmetrical relationship can, therefore, be replicated in relation to specific economic sectors. It is also not to be excluded that particular economic sectors, because of their inherent characteristics, may lend themselves to relative gains considerations more than other areas. Nonetheless, as with the distinction between the economic and the security area, it is fundamental not to elevate the impact of economic sectors as intervening variables to the status of independent variables. Sectoral differences may exasperate or dampen pre-existing

concerns with economic relative gains on the part of states but, in themselves, they do not explain the entire impact of such concerns on economic cooperation.

Contrary to the expectations of “orthodox” liberal economic doctrine, the liberal economic order of the 19<sup>th</sup> and 20<sup>th</sup> century, and in particular the economic order that emerged after World War II, has not generated the anticipated degree of economic specialization among nations. The post-war economic order, which Ruggie has labeled as one of “embedded” rather real liberalism, has produced a progressive “narrowing of the economic basis on which international transactions rest.”<sup>45</sup> While there has been specialization between advanced and less developed nations, the narrowing of the economic basis has primarily affected developed countries. “As a result, national exports structures among the industrialized countries are becoming ever more alike,” generating increasing competition for a restricted number of markets.<sup>46</sup> As Lipson points out, the post-war economic order, as institutionalized in the GATT regime, tends to favor intra-industry specialization, rather than inter-industry specialization.<sup>47</sup> Yet, because of the narrowing of their economic basis, industrialized countries have found it difficult to abandon entire sectors of their economies. Thus, in spite of the general growth of trade that followed WWII, the most developed nations have found

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<sup>45</sup>See Ruggie, “International regimes, transactions, and change,” pp.216-217.

<sup>46</sup>Ibid., p.218.

<sup>47</sup>See Lipson, “The transformation of trade,” pp.236-237.

themselves increasingly competing with each other in particular economic sectors.<sup>48</sup>

The GATT regime, while making substantive progress in the elimination of protectionist practices overall, has merely managed to “institutionalize” those practices in regard to the industrial areas where competition is more intense without actually eliminating them.<sup>49</sup> As suggested by the argument on asymmetric economic relations among states, protectionism and competition in those sensitive sectors are likely to be particularly acute given the closeness in economic capabilities among the major industrial powers.

In dealing with economic sectors, it may be useful to conceptualize specific areas of production as placed along a continuum according to their level of maturity. At one end of the continuum are basic, traditional sectors such as agriculture, steel, textile, clothing, transport equipment, and light engineering products. Those areas of production tend to be characterized by “standardized products and processes, national producers, price competition, and low levels of innovation,” and they are constrained in their capacity to adapt to import competition.<sup>50</sup> Not surprisingly, protectionist practices tend to be concentrated in these areas, and they are aimed mainly at the safeguard of domestic markets and maintenance of well-established relative standings among the producing nations. Given the difficulty of altering the existing balance

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<sup>48</sup>Ibid., pp.238-239.

<sup>49</sup>Ibid., pp.242-43.

<sup>50</sup>Ibid., p.248.

among producers, bilateral collaboration in such sectors may not be particularly difficult to achieve. Yet, tariffs, trade barriers, and subsidies express a lack of cooperation on a multilateral basis and defection on the existing "liberal" economic order. Arguably, competition in these areas may be interpreted as being caused by the expensive tradeoff between short-term costs and long-term absolute gains, rather than by relative gains considerations.

Competition motivated by concerns with relative gains is likely to increase as we move along the continuum towards newer and technologically more sophisticated sectors. In these fast-moving, technology-dominated, and burgeoning areas, relative advantages and losses may have serious and often irreparable consequences. Contrary to the stability of the aforementioned basic industries, high technology sectors are in constant flux. Given the "rising development costs and rapid obsolescence of new products, and considerable uncertainties and risks regarding performance, schedules, and market size," those areas are constantly subject to sudden modifications and redefinition.<sup>51</sup> Here, "the first producers to achieve mass production will dominate a market and preempt the entrance of competitors. Exporters with only a slight technological lead may hold a decisive cost advantage, preventing the development of local competition."<sup>52</sup> For instance, in the case of high-definition televisions (HDTV), Japan was the first country to devote a great effort to the development of such

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<sup>51</sup>See Tucker, "Partners and rivals," p.83.

<sup>52</sup>See Lipson, "The transformation of trade," p.249.

technology in the early 1970s. By the late 1980s, Japan enjoyed such a strong leadership in HDTV technology that the U.S. came to consider such sector almost as a "lost cause." Thus, the U.S. turned down the possibility to cooperate to an alternative HDTV system with the European Community in order to channel more resources toward more competitive high-tech areas.<sup>53</sup> Competitors in these sectors are, therefore, extremely wary of each other's "capacity to convert temporary market-share advantages or transferred technologies into long-run competitive advantages."<sup>54</sup> For those who lag behind, there is a great danger of being driven out of a particular market or of being put in a position of permanent disadvantage. As it occurs in the security realm, players in high-tech industrial sectors must face the possibility of being eliminated from the game and, when survival -in this case economic survival- is at stake, relative gains considerations tend to be disruptive for interstate cooperation.

It was originally thought that, because of the fast-moving, fluctuating character of high-tech industrial sectors and of the "fuzzy" boundaries of the markets associated with them, it was extremely difficult for states to regulate those areas on a multilateral basis or to intervene unilaterally to protect relative market advantages.<sup>55</sup> The developments of the 1980s and 1990s have instead shown that states can, at times, be even more aggressive in their support for and protection of high-tech industries that are

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<sup>53</sup>See Mastanduno, "Do relative gains matter?," pp.101-108.

<sup>54</sup>See Liberman, "Trading with the enemy," p.156.

<sup>55</sup>See Lipson, "The transformation of trade," pp.248-249.

considered of strategic importance than they are in regard of basic sectors. Strategies of constant domestic investment in research and development (R&D) and prevention of the transfer of sensitive technology to close competitors are commonly employed by states competing in high-tech productions.<sup>56</sup> Matthews, for instance, has presented an interesting comparison between the steel industry and the super-computers sector. In the heavily regulated area of steel production, technology tends to be quite standardized and “easily diffusable.”<sup>57</sup> Here, innovations do not come about quickly. If some technology advancement occurs, it can be rapidly adopted by the producing nations through the purchase of licenses.<sup>58</sup> The high-tech nature of the super-computers industry, on the other hand, places a premium on early relative advantages. Because the super-computers market is fairly new, and because of the rapid pace of innovation in such technology, producers with early technological and market advantages can devote greater resources to R&D and to the development of future generations of computers.<sup>59</sup> The history of the U.S.-Japan rivalry in this sub-sector throughout the 1980s and 1990s offers an outstanding example of economic competition motivated by relative gains considerations between two allies.<sup>60</sup>

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<sup>56</sup>See Tucker, “Partners and rivals,” pp.94 and 99.

<sup>57</sup>See Matthews, “Future gains and current outcomes,” p.142.

<sup>58</sup>Ibid., p.143.

<sup>59</sup>Ibid., p.134.

<sup>60</sup>Ibid., pp.130-131.



The intensity of the competition between the U.S. and Japan in the area of super-computers was clearly heightened by the closeness, in terms of technological capabilities, between the two states. In addition to the symmetry or asymmetry of the relation between the actors involved, the degree of competition and the possibility of collaboration in the high-tech sector may vary according to the characteristics of the technology involved. Technologies of high salience, that is, that are at the core of a specific production process are more difficult to share and more heavily protected than marginal technologies.<sup>61</sup> Similarly, technologies that are of easy appropriability, i.e. they are likely to rapidly improve the technological capabilities of potential partners, will be more strongly safeguarded.<sup>62</sup> Productions characterized by high “concentration” -the sensitive technology is concentrated in a few components of the final products rather than in several, discrete parts- are not likely to be the object of easy collaboration.<sup>63</sup> Finally, some technologies are less “vulnerable” to defection than others. Joint projects that may not be carried on by a single state, individually, after it has defected on a partner, may offer more prospects for cooperation than technologies that offer incentives for unilateral development.<sup>64</sup> Thus, the character of specific technologies may be an additional factor that, by providing large rewards to cheaters,

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<sup>61</sup>See Tucker, “Partners and rivals,” p.95.

<sup>62</sup>Ibid., pp.95-96.

<sup>63</sup>Ibid., p.97.

<sup>64</sup>Ibid., p.98.

may increase the temptation to defect or, by generating unequal distribution of the benefits from cooperation, encourages states to be concerned with relative gaps in gains.

The sectoral analysis of the area of international economy seems, therefore, to offer confirmation to the hypothesis that states are often preoccupied with welfare-related relative gains. Sectors in which relative gaps can be quickly and decisively transformed into substantive advantages are likely to be characterized more by conflict than by cooperation. The relative position that a state occupies appears to matter not only in relation to the economic area in general, but also in regard to specific economic sectors. Unlike well-established basic industries, fairly new and developing markets are characterized by rapid change and great uncertainty. States that do not manage to “start early” and maintain their relative position may be driven out of these sectors. States that quickly achieve an early lead, on the other hand, may transform these markets in quasi-monopolies. Considered the above-mentioned narrowing of the economic basis of developed countries and the consolidated stability of their basic economic sectors, it is not surprising to find harsh competition and relative gains-motivated behavior in expanding and rapidly evolving areas, such as the sector of high technology.

### **Security externalities and economic cooperation**

As illustrated so far, relative gains considerations in the economic area are often

generated by the importance that a state's relative position holds for the achievement of prosperity as a national objective. Contrary to the expectations of both neorealist and neoliberal theory, the security externalities of international economy do not need to be the only source of concerns with relative gains. It is undeniable that security considerations have a far-reaching impact on states' concerns with economic relative gains and on the amount of cooperation that can be achieved in the economic area. Because of the interconnectedness of power and wealth, the status of a country's economy affects the amount of security that can be obtained. International trade can be used by states as a means for pursuing power policy and for "increasing the military pressure that one country might bring to bear upon other countries."<sup>65</sup> Nonetheless, the impact of security externalities on economic relative gains concerns must not be exaggerated. Concerns with economic relative gains are likely to be security-motivated only under particular circumstances. As with the case of economic sectors, security externalities are likely to act as an intervening variable that may either increase or decrease concerns with economic relative gains, but they do not provide the only comprehensive explanation about the origin of relative gains.

It is usually claimed that patterns of amity and enmity have an evident influence on the nature of states' relative gains concerns and on their willingness to cooperate in the economic sector. Gowa and Mansfield, for instance, have indicated that we are more likely to find patterns of free trade among allies. Moreover, they have found that

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<sup>65</sup>See Hirschman, *National Power and the Structure of Foreign Trade*, p.14.

free trade is more likely to flourish in a bipolar system than in a multipolar one because: 1) the costs of “exit” for partners are higher; and 2) great powers are less prone to use their economic power to exploit smaller allies.<sup>66</sup> Economic gains among allies may be positively seen as an improvement of the alliance’s strength. The real relative gains game, it is usually suggested, is actually played with the opponent. As long as the inter-alliance balance is not altered, and insofar as some partner does not threaten to defect to the opposite side, unequal distribution of gains among economic competitors that are also allies is generally tolerated.

However, the argument about relative gains and patterns of amity and enmity is not as straightforward as usually postulated. Peter Liberman, for instance, finds that Great Britain continued to trade with Germany in the two decades preceding World War I, and that the United States did not interrupt economic transactions with Japan in the 1930-1941 period.<sup>67</sup> Similarly, Mastanduno postulates that continuous trade with an opponent may be used as a means for creating “tactical linkages” that may: 1) increase that state’s influence on the opponent’s economy; and 2) help to redirect the allocation of resources within the target economy. Economic tactical linkages are aimed, therefore, at reducing the adversary’s military threat, even if in the process its

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<sup>66</sup>See Gowa, “Bipolarity, multipolarity, and free trade,” p.1249; and Gowa and Mansfield, “Power politics and international trade,” pp.408 and 416-417.

<sup>67</sup>See Liberman, “Trading with the enemy,” pp.159-173.

capabilities are increased.<sup>68</sup> Yet, in analyzing the pattern of economic relations between the U.S. and the Soviet Union in the 1970s and 1980s, Mastanduno finds that trade between the superpowers involved mainly items that were unlikely to be immediately transformed into military advantages. The U.S. continued to refuse to trade sensitive products, such as software, robotics, micro-computers, and computerized telecommunications and equipment, that is, those "items currently at the forefront of Western trade competition."<sup>69</sup>

Mastanduno's argument suggests that the impact of security externalities on economic cooperation can be better explained if the hypothesis about patterns of amity and enmity is intersected with the sectoral analysis of the economic area. In this case, the problem is one of assessing the degree of convertibility of specific economic gains into military advantages. Indeed, if all economic production and collaboration carried with itself security externalities, and if all countries were potential enemies, the degree of economic cooperation would be equal to zero. Arguably, it appears more reasonable to hypothesize that, in their relations with real or potential enemies, states would be more concerned with those economic relative gains that may be immediately transformed into military advantages.<sup>70</sup> Therefore, the more feasible the conversion of those gains into security gaps, the greater a state's sensitivity to economic relative

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<sup>68</sup>See Michael Mastanduno, "Strategies of economic containment: U.S. trade relations with the Soviet Union," *World Politics*, Vol.37, No.4 (1985), pp.514-516.

<sup>69</sup>See Mastanduno, "Strategies of economic containment," p.526.

<sup>70</sup>See Liberman, "Trading with the enemy," p.155.

gains.<sup>71</sup>

As Robert Powell has claimed, the stability of the offense/defense balance and the state of military technology are likely to determine the extent to which states are concerned with the relative gains of economic cooperation.<sup>72</sup> Similar to what occurs in Tucker's PAR model in the relations among economic competitors, states are likely to be extremely wary of each other's advantages when there is the possibility that the military balance can quickly be altered by the addition of small gains or by the introduction of a particular innovation. There seems to be general consensus that the economic relative gains most likely to undermine an existing security balance are those involving the same technology-sensitive products that are a source of competition among economic partners. Mastanduno refers to technology as a "bottleneck item," in that "unlike raw materials or finished products, technology is not used up in the production process. Rather, it provides the recipient with an enduring improvement in capabilities."<sup>73</sup> High-tech economic sectors generate "dual use" products, that is, products that not only have commercial relevance, but that may also have immediate security applicability and may radically improve a state's military potential.<sup>74</sup> Micro and

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<sup>71</sup>See Matthews, "Current gains and future outcomes," p.119.

<sup>72</sup>See Powell, "Guns, butter, and anarchy," pp.125-127; also *ibid.*, "Absolute and relative gains in international relations theory," p.1306.

<sup>73</sup>See Mastanduno, "Strategies of economic containment," p.509.

<sup>74</sup>See Theodore M. Moran, "The globalization of America's defense industries: Managing the threat of foreign dependence," *International Security*, Vol.15, No.1 (1990), pp.57-99.

super-computers, satellite technology, super-conductors, aerospace technology, ceramics, integrated optics, specialty chemicals, all qualify as dual use products that may alter not only the economic balance among economic competitors, but also the military balance among adversaries.

In advanced countries, the high-tech industry and the defense industry have grown progressively more intertwined. Civilian high-tech industries produce many dual use items. Conversely, a vast share of technological innovation is the result of R&D in the defense industry. In regard to technology, the problem for states is not one of choosing between guns or butter, but rather one of obtaining both guns and butter. In this sector, states face a difficult tradeoff between pursuing cooperative policies that may bring about greater economic rewards but also increase dependence on foreign suppliers for products that are essential to the defense industry, or bolstering domestic investment in R&D and adopting protectionist practices that reduce economic advantages, but that also reduce external dependence.<sup>75</sup> The optimal solution would be the pursuit of cooperative policies that allow the acquisition of superior technologies from friendly countries and promote diversification of defense-related productions, thus avoiding the concentration of key production processes in only a few countries.<sup>76</sup> Yet, the tendency in the 1980s and 1990s has been in the direction of “strategic trade policies” that combine protectionist tactics and domestic promotion of high-tech

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<sup>75</sup>See Moran, “The globalization of America’s defense industries,” pp.69-73.

<sup>76</sup>Ibid., pp.73-84.

sectors.<sup>77</sup> Strategic trade policies clearly avoid the specter of the loss of domestic autonomy, but they tend to be economically counterproductive and do not necessarily guarantee the continuous development of the technological “cutting edge.” For instance, Theodore Moran reports that in the U.S., during the 1980s, security analysts have been extremely vociferous in warning that the American defense industry was becoming too dependent on foreign producers. Defense experts claimed that a stronger governmental intervention was needed to contrast the short time horizon in R&D of American private companies and to redress those free market forces that were promoting concentration, rather than diversification, of suppliers of technology-sensitive products.<sup>78</sup> The Department of Defense (DOD) actually identified 22 technologies that were deemed crucial for the defense industry and declared the American relative disadvantage in at least six of those areas to be a threat to national security.<sup>79</sup> The solution was to resort to strategic trade policies, aimed at consolidating and protecting the areas in which the U.S. enjoyed greater relative strength and promoting technology appropriation in areas of relative disadvantage.<sup>80</sup>

The enormous security externalities of the high-tech industrial sector generate a situation that, without being a zero-sum game, forces states to pursue policies that are

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<sup>77</sup>Ibid., p.91.

<sup>78</sup>Ibid., pp.57-59 and 79.

<sup>79</sup>Ibid., p.61.

<sup>80</sup>Ibid., pp.94-97.



motivated by both economic and security relative gains considerations. Technology-sharing would arguably promote the welfare of all of the partners in a cooperative agreement. Yet, the nature of high technology in both the economic and security realms, i.e., its capacity to rapidly and often irreversibly alter the balance among competitors and reduce an individual state's autonomy, makes relative gains considerations prominent in this sector. Here, the conjunction of economy and security-motivated relative gains concerns creates a "lethal potion" for interstate cooperation. Yet, it is to be remembered that the security externalities of economic cooperation are likely to weigh heavily only in this sector. The fact that economic cooperation in areas other than the high-tech sector not only occurs among allies, but it is also pursued between adversaries in spite of security-motivated relative gains concerns, should induce some caution in estimating the impact of security concerns in the economic realm.

### **Final considerations**

The task of assessing the impact of relative gains concerns on interstate cooperation in the economic area is not as straightforward as in the security realm. Neoliberals, on the one hand, claim that relative gains matter only in relation to security matters and draw a clear distinction between the two areas. Neorealists, on the other hand, state that because the gains of economic cooperation can be converted into security advantages and because states are primarily concerned with survival,

international economy and security are almost indistinguishable and relative gains hold the same weight in both realms. However, the in-depth analysis of the economic area appears to run counter both theories. States often pursue economic cooperation in the face of evident security externalities, while often failing to collaborate out of concern with economic relative gaps.

It can be concluded that neither should security externalities be exaggerated, nor should we underestimate the impact of concerns with purely economic relative gains. As the analysis of specific sectors within the economic realm seems to suggest, not all economic gaps can be converted into security advantages. At the same time, even though prosperity is not a zero-sum good like security, relative position can often matter for how much wealth a state can achieve. No state is likely to be satisfied with being in an inferior position if that means receiving a lower share of the benefits of cooperation or constantly being coerced by greater economic powers. The orientation with which states enter the "economic game" is important for understanding why states seem to care so much about relative gains when their security is a remote issue. As Matthews puts it, "relative gains concerns transcend the issue of their translation into security benefits. Just as relative gains in security pertain directly to the issue of security, so too can relative gains in IPE pertain directly to the issue of economics. Relative gains can be seen as important for the impact they have on the economic benefits that a state can realize."<sup>81</sup> States, therefore, appear to care about their degree

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<sup>81</sup>See Matthews, "Current gains and future outcomes," p.119.

of autonomy, independence, and competitiveness in the economic area because economic positionality is perceived to be as important for prosperity as security positionality is for survival.

Countries are, therefore, extremely wary of asymmetries in their relations and of their respective degrees of competitiveness, both in general terms and in relation to specific economic areas. Moreover, as it occurs in the security arena, they are likely to be wary of relative gaps whenever they can be immediately transformed into irreversible, long-term losses. Yet, patterns of asymmetries, degrees of competitiveness, sectoral differences, and rapidity of economic gains convertibility do not provide a complete explanation of why economic relative gains matter. It is important to remember that such factors operate as intervening variables in explaining when relative gains matter more and when they matter less. Approaching the issue of relative gains in the economic area through several intervening variables ought not to obscure the real issue. Rather, it ought to help to focus on the fact that states are concerned with economic relative gains because positionality matters for achieving the goal of prosperity, and when relative gains interfere with the realization of such objective, cooperation will unlikely be seen as a viable policy alternative.

## CHAPTER V

### CONCLUSION: POSITIONALITY, STATES' OBJECTIVES, AND THE IMPORTANCE OF RELATIVE GAINS

Along with international regimes, the question of whether and to what extent relative gains concerns affect the prospects for cooperation among states has arguably been the issue that has received most attention from neoliberal and neorealist scholars in the past two decades. During the 1980s and 1990s, the relative gains issue has been dissected, taken apart, reduced to its minimal components, and investigated from all possible angles. All scholars now seem to agree that states actually care about relative gains, and that relative gains are an obstacle to interstate cooperation. Everything seems to have been said and written about this topic. Yet, it is questionable whether this flurry of research has actually brought greater clarity to our knowledge of the subject. In fact, in looking at the literature on relative gains and cooperation of the last twenty-or-so years, it is possible to witness a proliferation of researchable variables, all of which explain some degree of variation in states' concerns with relative gains in some specific context of international politics. However, the original research question of greater theoretical relevance for both neoliberalism and neorealism -why do states care about relative gains?- has been subsumed by the problem of discovering when and how much states care about relative gains. While answering the latter question may represent an indirect (inductive) route to the original problem, this approach has generated an endless chain of self-reproducing variables that provide us with more and

more details, but that are increasingly more difficult to reassemble into a broad, parsimonious theoretical vision.<sup>1</sup> As Powell points out, the result is not only a proliferation of additional research questions that are less and less relevant to relative gains issue, but also the confusion of causes and effects. Relative gains are no longer an independent variable that helps us to explain the extent to which cooperation among nations takes place, but a dependent variable that needs to be explained.<sup>2</sup>

Indeed, the relative gains debate between neorealists and neoliberals has undergone an unexpected evolution. The relative gains issue has been latent in international relations theory at least since the post-World War II re-codification of realism. Yet, the topic has come prominently to the fore only as a consequence of the “neoliberal challenge” to neorealism of the 1980s. In its original formulation, the relative gains problem represents a major theoretical divide between neoliberalism and neorealism because it calls into question the major theoretical assumptions of both schools of thought. Do states care about wealth and absolute gains? Or are they mainly concerned with security and relative gains? Answering these questions in a definitive manner would be equivalent to undermining the foundations of either theoretical perspective. Thus, the ardor with which neoliberals and neorealists jumped into the debate should not be surprising. What is surprising is the way in which the

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<sup>1</sup>See, for instance, Helen Milner’s call for further identification of more context-specific variables and for an extension of the relative gains analysis from the system-level to the states’ domestic environment, in Milner, “International theories of cooperation among nations,” pp.481-495.

<sup>2</sup>See Powell, “Anarchy in international relations theory,” p.314.

debate has developed within a few years from its inception. Instead of bringing about the settlement of longstanding theoretical questions, the relative gains issue has worked as a common research agenda that has fostered a rapprochement between neoliberalism and neorealism that Waever has labeled the “neo-neo synthesis” of the 1980s.<sup>3</sup>

From a shared definition of cooperation and from the common employment of game theory as an analytical tool, neoliberalism and neorealism have come to agree that states are generally concerned with relative gains, but that relative gains do not have the same impact on international cooperation under all circumstances. There is clearly nothing wrong with this statement (if not that it sounds almost like a truism). It would be, in fact, unrealistic to expect that states hold a constant and unchangeable preoccupation with relative gains in the face of the enormous variety of interactions that are possible in international politics. The problem, instead, lies with the fact that the neoliberal/neorealist compromise has failed to foster much theoretical progress. In their preoccupation with establishing the relative weight of relative gains in different settings, neoliberals and neorealists have devoted enormous efforts to the analysis of specific issue-areas and of the contextual variables that characterize such sectors of international politics. The area of security and that of international political economy have attracted the greatest attention, with neoliberals trying to establish precise boundaries between the two, and neorealists attempting to demonstrate their indistinguishability. From this stage, the debate has moved from the study of the

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<sup>3</sup>See Waever, “The rise and fall of the inter-paradigm debate,” p.163.

problem of relative gains *per se* to the almost unsolvable problems on convertibility and fungibility of power. Can relative gains in the security area produce differences in gains in other issue-areas? Are economic relative gains convertible into security advantages and, if so, when? We now know a great deal about the offense/defense balance, areas of trade, sectors of production, dyads of actors, and so on. We also have an impressive number of incredibly sophisticated and complex models concerning almost all of the factors that may influence states' degrees of preoccupation with relative gains.

Nonetheless, in spite of all this context-specific knowledge, the broader theoretical framework has not been substantially moved much further. Neoliberals still assume that welfare is states' main objective and, therefore, conclude that relative gains have a limited and circumscribed impact on the problem of interstate cooperation. Neorealists continue to claim that relative gains matter because survival is the principal goal of states.

The in-depth analysis of different issue-areas clearly confirms that the impact of relative gains varies as the features of the strategic context vary, and that relative gains appear to be of greater relevance when security is involved. Thus, according to the terms in which the debate has been reformulated in recent years, both neorealism and neoliberalism seem to find confirmation of the correctness of their assumptions in these results. Yet, as shown in the preceding chapters, the analysis of specific issue-areas and of their features brings to the light several anomalies that quite often tend to be overlooked. In spite of the overriding concerns with relative gains generated by the

ubiquitousness of the security dilemma and by the zero-sum nature of survival as a state's objective, some collaboration occurs in the security realm. Cooperation in the security arena is not particularly extensive, and it endures as long as the partners' position relative to each other is not radically compromised by the intra-agreement "relative gains game." Yet, insofar as the balance among participants is preserved, states appear willing to accept asymmetric distribution of benefits and the risk of being cheated, even though "today's friend may be tomorrow's enemy in war."<sup>4</sup>

The picture emerging from the analysis of the area of international economy is even more puzzling. Here, contrary to neoliberals' expectations, countries appear to place great value on their economic independence, autonomy, and competitiveness, and they seem to be extensively preoccupied with the possible consequences of relative gaps in gains. Although the economic area is usually depicted as being more conducive to cooperation, especially because wealth is not an all-or-nothing objective, and because there is no apparent danger of being eliminated from the game, it appears that economic competition may quite often turn into a zero-sum game, as states strive for gaining access to new markets and preserving their position in old industrial sectors. States' preoccupation with asymmetric interdependence and competitiveness increases the impact that purely economic relative gains have on interstate collaboration. Also contrary to neorealists' expectations, not all concerns with economic relative gains appear to be motivated by security considerations. States often trade with their direct

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<sup>4</sup>See Grieco, *Cooperation Among Nations*, p.29.



opponents and choose to cooperate in spite of evident security externalities, regardless of whether the partners are allies or enemies. Indeed, there is the possibility that the issue of convertibility of economic gains into security advantages is the subject of a theoretical overstretch. Potentially, all butter can be converted into guns, and all states in the international system may be tomorrow's enemies. But how does this square with the fact that the U.S. continued to sell wheat to the Soviet Union throughout the Cold War? And how can this explain the tariff war on pasta between the U.S. and the EC during the 1980s?<sup>5</sup> While the question about the strategic value of pasta can be left open to debate, two things seem to emerge from the analysis of cooperation in the economic area. First, pure security externalities, as conceived by neorealists, are likely to be limited to those economic sectors involving items that are of *immediate* convertibility, and that can quickly alter the strategic balance. Second, as indicated by Hirschman, Mastanduno, and several others, economic cooperation may be a valuable tool for, rather than a liability to, the achievement of greater security in spite of asymmetric concessions to the adversary.<sup>6</sup> The relationship between security concerns and economic cooperation, therefore, is not necessarily unidirectional. Security considerations may at times prevent and at times sustain economic collaboration, in the same way as concerns with economic benefits may sometimes ameliorate the security

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<sup>5</sup>For an overview of the tariff war on pasta products between the U.S. and the EC during the 1980s, see Grieco, *Cooperation Among Nations*, pp.95-98 and 178-179.

<sup>6</sup>See Hirschman, *National Power and the Structure of Foreign Trade*, chap.2; also Mastanduno, "Strategies of economic containment," especially pp.506-510.

dilemma and sometimes work as a source of conflict.

Security and wealth, or “power and plenty,” appear so closely intertwined to be almost inextricable. The theme of the interrelatedness of security and welfare is recurrent in international relations literature. Robert Gilpin, for instance, refers to the “reciprocal and dynamic interaction in international relations of the pursuit of wealth and the pursuit of power.”<sup>7</sup> Similarly, Robert Keohane talks about the complementarity of the two elements, stating that there can be no power without wealth and viceversa.<sup>8</sup> A similar argument had been made by Hirschman in the 1940s.<sup>9</sup> Considering the interconnectedness of welfare and security, the recent attempts on the part of both neoliberals and neorealists to understand where the two objectives overlap and when they do not may not be particularly productive for the evolution of the relative gains debate. The analysis of the security and economic realms seems to suggest that relative gains considerations may actually result out of concerns with both security and wealth as national goals. In some occasions, preoccupation with security gives rise to concerns with economic relative gains and viceversa. In other occasions, relative gains concerns are circumscribed to either purely security-related goals or welfare-related objectives. As stated earlier, such a formulation of the debate about relative gains has generated a research program that is likely to keep spinning on itself without actually

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<sup>7</sup>Cited in Kal J. Holsti, “Politics in command: Foreign trade as national security policy,” *International Organization*, Vol.40, No.3 (1986), p.644.

<sup>8</sup>See Keohane, *After Hegemony*, pp.18-25.

<sup>9</sup>See Hirschman, *National Power and the Structure of Foreign Trade*, chap.1.

coming to the real test of its starting assumptions.

As the context-specific analysis of the security realm and of the area of international economy seems to indicate, and as the literature on the interrelatedness of security and wealth appears to point to, there also exists the oft-overlooked possibility that states are indeed multipurposed actors, who are equally interested in survival and prosperity.<sup>10</sup> As Holsti puts it, states “do not choose one to the exclusion of the other, nor does one determine the other. They constantly shift priorities to emphasize one or the other. Tradeoffs and ‘satisficing’ rather than maximization, occur. It is a question of relative preferences.”<sup>11</sup> Such an assumption engenders the hypothesis that states’ attention to relative or absolute gains do not stem either exclusively from welfare or uniquely from survival. Regardless of the objective they are pursuing at any given time, states face the relative gains problem whenever relative gains stand in the way toward the achievement of that goal. Again, in the words of Kal Holsti,

The purposes of power, from this perspective, are admittedly defensive: successful policies will protect autonomy, maximize latitude of choice in policy making, reduce constraints emanating from abroad, and maintain domestic political legitimacy and authority. Power in this sense is really synonymous with the concept of security.....“Plenty” is conceived as economic opportunities abroad, opportunities that are considered to increase overall wealth within the society. Policy makers usually define these opportunities as increased access to new markets for trade and investment or, at a minimum, protection for established markets that are threatened with reduction.<sup>12</sup>

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<sup>10</sup>See, for instance, Wolfers, *Discord and Collaboration*, chap.5 and 6.

<sup>11</sup>See Holsti, “Politics in command,” p.645.

<sup>12</sup>*Ibid.*, p.646.

The issue seems to be one of positionality. Because relative position in both the economic and the security area is instrumental for obtaining either goal, or even both at the same time, countries are likely to be wary of relative losses and of asymmetric distributions of benefits, if those gaps threaten to compromise their relative position and the achievement of the objectives at stake. Thinking about instrumental positionality as a dynamic and issue-area related concept, rather than generic, systemic positionality offers the advantage of providing a picture that is at the same time structural and situational. It is structural because a state's relative position in any given issue-area depends on how the capabilities in that realm are distributed. It is situational because it presupposes that relative gains will constitute an obstacle to cooperation only when positionality is in danger of being altered. Conceiving the issue of relative gains as one of dynamic, instrumental positionality allows us to think of states as actors with a variety of goals and whose concerns with relative gains are not constant and fixed. Thus, it allows us to explain why states may adopt relative gains-motivated policies in areas, such as the economic one, where absolute gains ought to prevail, and why they may at times overlook relative gains in areas that are more unforgiving and crippled by conflict, such as the security arena.

Moreover, such a formulation provides a higher degree of parsimony, and arguably of theoretical abstraction, than structuring the relative gains problem exclusively as a situational problem involving a specific dyad of countries, with specific domestic structures, interacting in a sub-sector of some issue-area at a precise point in

time. Holsti is clearly correct in stating that

No single model of the nexus between economics and politics is sufficiently rich to account for the very different circumstances of all countries. Nor will static models do. The connection between economics and politics cannot be essentially the same in the United States and Fiji, or in Japan and Bhutan. All countries have welfare and security goals, yet the manner in which they pursue them varies across time and over different issues.<sup>13</sup>

Yet, the recognition that all countries share the goals of security and prosperity may constitute a spare, but sufficient starting point for a view of the relative gains issue that revolves around the notion of positionality as the key factor in the accomplishment of a nation's goals. In fact, as Stein claims, "were it not for concern about relative standing, states could specialize and acquire various niches while becoming dependent in other areas....Instead, states continue to duplicate one another, each attempting to be as self-reliant as possible when it comes to ensuring its military and economic survival and security. Minimally, within the domain of national security and the constraints of resources, states duplicate one another."<sup>14</sup>

Most important, looking at the problem of relative gains and cooperation in terms of states' interests with a multitude of goals and in terms of instrumental positionality may allow the researcher to circumvent the vicious trap of over-determining the context-specific features of different issue-areas in the attempt to discover what factors may reduce or foster concerns with relative gains. Relative position matters for the achievement of both prosperity and security, regardless of the

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<sup>13</sup>Ibid., p.669.

<sup>14</sup>See Stein, *Why Nations Cooperate*, p.116.

inherent features of the respective issue-areas. Again, the contextual characteristics of a realm of interaction determine the extent to which actors care about relative gains, but in themselves they do not necessarily generate concerns with relative gains. Because of the a-contextual relevance of positionality, the possibility exists that relative gains concerns are, at least in part, generated by the orientation with which states enter any given interaction in any given issue-area. The analysis of context of interaction, in fact, seems to indicate that there are more similarities across issue-areas than differences in the way in which states come to terms with the issue of cooperation and relative gains. The element of conflict that is inherent to the problem of relative gains is likely to be engendered by the states' awareness that their relative position is fundamental for the achievement of their national objectives. The peculiar characteristics of an issue-area may exacerbate or soften states' orientation toward either collaboration or conflict, but part of the origin of concerns with relative gains lies in the actors themselves. As Stein points out, the nature of the good in question, that is, the objective at stake, is only one term of the equation and cannot account for the entire outcome. If we are to understand the whole picture, we also have to consider, the orientations of the states involved.<sup>15</sup> Along the same line, Grieco tells us that the coefficient of sensitivity to relative gains  $k$  can be influenced by several contextual variables and can range from 0 to 1. Yet, the coefficient can never be equal to zero, and this is because the sensitivity to relative gains is within the actors, and not

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<sup>15</sup>Ibid., pp.121-122.

exogenously induced.<sup>16</sup> The contextual variables of an issue-area make a Prisoners' Dilemma more or less severe, but it is through the actors' interpretation of the game that the PD may be turned into a game of Deadlock or into a Stag Hunt. Few situations in themselves are purely zero-sum. The amount of wealth in the international economy is not fixed and, as indicated in Chapter III, even the security dilemma can be either a PD or a Stag Hunt. However, those situations are transformed into constant-sum games "if the actors adopt relative conceptions of self-interest and competitive rather than individualistic orientations."<sup>17</sup>

To summarize, the recent tendency on the part of both neoliberals and neorealists to tackle the issue of relative gains and interstate cooperation by (over)analyzing context-specific features of particular issue-areas and by drawing differences and similarities among them provides us with valuable details, but it engenders the risk of losing sight of the greater issue. That is, why do states care about relative gains? Within this approach, relative gains no longer are an independent variable that explains the occurrence or lack of cooperation, but they become just another dependent variable. The result is that intervening variables are confused with independent ones, and the hypotheses generated by the starting assumptions of neorealism and neoliberalism are not truly being tested. Rather, the debate is producing an over-proliferation of variables that works against parsimony and opens the door to

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<sup>16</sup>See Grieco, *Cooperation Among Nations*, pp.41-47.

<sup>17</sup>See Stein, *Why Nations Cooperate*, p.121.

reductionism.

### **Proposals for further research**

In-depth analysis of the areas of security and international economy shows that the two realms are so deeply interconnected that trying to specifically delineate where they overlap and when they differ is almost a quixotic effort. This analysis fails to show that states are less concerned with relative gains because they are interested in wealth, or that they are wary of relative gains because security is the only national goal. Rather, such an approach suggests that states pursue both security and prosperity, and that states consider their relative position to be instrumental to the achievement of both goals. When the danger exists that asymmetric gains may alter the actors' positions so that those objectives may not be reached, then relative gains concerns become stronger and work against the attainment of cooperation. Yet, as simplistic as it may sound, the assumption that relative gains matter across and above issue-areas, because concerns with them originate from states' orientation and preoccupation with positionality, generates several additional hypotheses that have so far received limited attention in the literature about relative gains and cooperation.

First, the fact that states appear to be concerned with positionality across and above issue-areas -even in sectors where the use of force is a marginal preoccupation and security is not at stake, such as the area of international economy- raises the question of whether relative gains concerns actually derive from the anarchical nature



of the international system, as it is usually conceived by neorealists.<sup>18</sup> The neorealist response to this question would likely be that all economic relative gains matter because they are convertible into security advantages and, therefore, affect both the likelihood that states may resort to violence and the effectiveness of the use of violence. Yet, we have seen that not all economic gains are convertible, and that states tend to be concerned mainly with those gains that are of immediate convertibility. Moreover, it has been argued that cooperation in the face of relative losses may improve a state's security by providing it with more means for influencing an opponent. If these arguments are correct, it would then be possible to argue that the neorealist assumption of anarchy is relevant only to the explanation of concerns with relative gains and positionality in the security area, and that neoliberals may be more correct in conceiving international anarchy as simply the absence of a centralized authority, rather than a system where the threat of the use of violence is always present.<sup>19</sup>

Second, the observation that states' orientations and perceptions play such a great role in determining relative gains concerns and in shaping the outcomes of states' interactions generates the question of whether Prisoners' Dilemma is actually the best model of the problem of international cooperation. As mentioned earlier, the great advantage of PD is that it encompasses the contradiction between self-interest and collective benefits that states are supposed to face in their encounters. But do states

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<sup>18</sup>See, for instance, Grieco, "Anarchy and the limits of cooperation," pp.495-503.

<sup>19</sup>On this issue, see Powell, "Anarchy in international relations theory," pp.330-334.

actually conceive the problem of cooperation in these terms? The fact that the relative gains problem lies to a very large extent in the actors' orientations seems to suggest that states are likely to either downplay or exaggerate the amount of conflict inherent in the problem of cooperation, rather than making precise assessments about the severity of the PD. That is to say, states may not perceive the ambiguous tension of a PD situation. Rather, they may perceive either conflict or cooperation, and not degrees of the two components. Thus, they may decide not to cooperate when they perceive a relative gains problem in the interaction at hand, while they are likely to collaborate when they focus their attention on the mutual benefits. Because states' orientations toward the problem of gaps in gains seems to remain uniform across issue-areas, there is the possibility that the correct research question is not: "What contextual factors make the payoff structure of a PD more or less severe?" The correct question may very likely be: "When do states see a situation of Deadlock, and when do they see a game of Harmony or Coordination?"

As a model, Prisoners' Dilemma is fully consistent with the definition of cooperation commonly adopted by neoliberals and neorealists. Yet, as Robert Jervis suggests, "the model of PD may be popular not because it catches the most important dynamics of international politics, but because it is intriguing and lends itself to interesting manipulations."<sup>20</sup> Excessive reliance on PD as a research instrument, as epitomized by the findings of *The Evolution of Cooperation*, may have encouraged

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<sup>20</sup>See Jervis, "Realism, game theory, and cooperation," p.323.

excessive attention to the framework of the game itself and on the contextual elements that can affect it, deviating our attention away from the actors and their perceptions. Stein's and Conybeare's analysis of asymmetric games seems to indicate that the actors' relative size influences their perceptions of the game being played and their preferences for either cooperation or defection. These games are rarely Prisoners' Dilemmas. They tend, instead, to be combinations of games of Stag Hunt, Chicken, and Deadlock, that is, games in which the elements of conflict and cooperation are not as ambiguous as in a PD but stand out more clearly.<sup>21</sup> Thus, focus on the issue of relative gains as a problem of orientations and perceptions that spans across issue-areas, rather than a problem of context, opens up the possibility that Harrison Wagner - to my knowledge, the only scholar to do so - is correct in telling us to think about Harmony when we see cooperation, and about Deadlock when we observe defection.<sup>22</sup>

Third, looking at the relative gains issue from above, rather than from within specific issue-areas may provide us with a better perspective for investigating the question of whether the impact of relative gains on interstate collaboration has changed in a post-Cold War system that is arguably multipolar in character and that has witnessed a proliferation of nuclear states. As John Matthews points out, "unlike

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<sup>21</sup>See Conybeare, "Trade Wars," pp.148-150; *ibid.*, "Public goods, Prisoners' Dilemmas and the international political economy," pp.13-19; see also Stein, *Why Nations Cooperate*, especially chap.3.

<sup>22</sup>See Wagner, "The theory of games and the problem of international cooperation," pp.344-345.

conventional weapons, nuclear weapons have an absolute threshold.”<sup>23</sup> It can in fact be argued that, once a state has acquired second-strike capabilities, it has achieved an almost absolute level of security which makes comparisons of relative power almost meaningless. This consideration generates two additional hypotheses that deserve further analysis. In the first place, as Liberman proposes, it is possible that the post-Cold War diffusion of the logic of nuclear deterrence has “dampened the military significance of economic advantage and mitigated the security component of the relative gains problem,” and that the insecurity produced by the spread of nuclear weapons “will not generate the kind of economic envy that pessimists predict will hinder cooperation.”<sup>24</sup> Alternatively, it is possible that Kenneth Waltz is correct in predicting that the diffusion of nuclear weapons and the proliferation of nuclear states will generate greater systemic stability, but that greater general security will engender more intense economic competition and exasperate the attention that states pay to economic relative gains. Because they will be less constrained by security considerations, Waltz argues, states will be more likely to compete for position in the economic realm.<sup>25</sup>

Finally, as Matthews suggests, shifting our focus away from the details of issue-

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<sup>23</sup>See Matthews, “Current gains and future outcomes,” p.145.

<sup>24</sup>See Liberman, “Trading with the enemy,” p.175.

<sup>25</sup>See Kenneth Waltz, “The emerging structure of international politics,” in *The Perils of Anarchy*, M. Brown, S. Lynn-Jones, and S. Miller, eds. (Cambridge, Mass.: MIT Press, 1995), pp.42-77.

areas to the broader notion of positionality may allow us to pay greater attention to the seldom considered issue of cumulation of relative gains.<sup>26</sup> The problem of cumulation is not one of linear and progressive “piling on” of relative gains that generate, in the end, a greater amount of any given good, be it security or wealth. If in fact cumulation occurred in this manner, it would be easier for states to quickly detect the problem and abandon or avoid those agreements that imply such a risk. Rather, the problem is one of gains or losses at time T1 that produce exponentially greater gains or losses at T2, so that one player’s relative position is irreparably compromised, while the other acquires undisputed predominance. The problem of cumulation is not simply quantitative, but also qualitative. As seen in the previous chapters, some interactions, such as those involving high technology or particular weapons systems, seem to lend themselves to the problem of cumulation.

The issue is not irrelevant, since it affects some of the major tenets of both neoliberalism and neorealism. The possibility that relative gains may cumulate has an evident impact on the capacity of states to retaliate effectively after a defection which, in turn, may undermine the efficacy of strategies of reciprocity -a notion in which neoliberals appear to have unlimited faith. In addition, because cumulation may apply in all issue-areas, included the economic realm, it may confirm the hypothesis -also advanced in this paper- that relative gains matter also for the achievement of prosperity. Moreover, the problem of cumulation affects the neorealist belief that, because all gains

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<sup>26</sup>See Matthews, “Current gains and future outcomes,” pp.112-116.

are convertible into absolute advantages, states operate with such a long-term vision that they are equally wary of allies and enemies alike. If the hypothesis about the exponential character of cumulation is correct, states may actually be constrained to act under a very short-term rationality, limiting their relative gains concerns to interactions with direct opponents and involving gains of immediate convertibility. And, indeed, the possibility that states may be concerned not with all relative gains, but only with those gains that are immediately convertible shortens the time horizon under which states interact so much that it becomes legitimate to ask whether the formulation of the problem as one between long-term absolute gains and short-term relative gains is actually correct. Further inquiry in the problem of cumulation may, in the end, lead us to agree with Duncan Snidal that the problem of relative gains versus absolute gains is incorrectly formulated, and that we ought to look at it as a problem of tradeoffs between short-term and long-term absolute gains.<sup>27</sup>

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<sup>27</sup>See Snidal, "Relative gains and the pattern of international cooperation," p.704.

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