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Neorealism's Logic and Evidence: When is a Theory Falsified? *

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Knowledge progresses through a dynamic process. Arguments are made for the plausibility of hypotheses. The logic of such arguments is scrutinized and the evidence for and against the inferences drawn from the arguments is evaluated. Progress is made by reducing the set of logically and empirically plausible explanations of the phenomena of interest. Such reduction takes place on at least two levels. Some seemingly plausible explanations are eliminated for want of logical coherence. Others, passing the test of logical coherence, are superceded by alternatives that account for a broader array of empirical phenomena and/or a broader set of facts. In this essay I suggest that on both grounds, the neorealist research program is no longer a plausible explanation of the central phenomena in international relations with which it is concerned.

Origins of Realist and Neorealist Thought

The Second World War shattered confidence in idealistic, utopian views of international politics. To be sure, after the war there still were the World Federalists and other organizations that believed orderly international affairs could be achieved by bringing people together and educating them to their common interest. In counterpoint to the idealism that dominated pre-war scholarship on international security, the post-war years witnessed a renaissance of efforts at positive, rather than normative analysis. Principal among the early efforts to direct research in a more "realist" way were studies by Hans Morgenthau (1948), Kenneth Waltz (1957), Morton Kaplan (1957), Kenneth Organski (1958) and many others. Each sought to identify the central factors that govern how nations interact with each other. In doing so, each subscribed to certain common principles that continue to dominate thinking about international relations.

The new realists saw the state, rather than individual leaders, as the central actor on the world stage. Because decision makers were relegated to a fairly minor role, sharp

distinctions were drawn between domestic politics and international politics. The former was seen to refer to the maneuvering within the state and often included foreign policy, while the latter was said to deal with the "international system" and the role states play within that system. The focus of attention was on the system, its central characteristics and the factors thought to give it stability.

By the 1980's, the leading contender among competing realist theories clearly was Waltz's theory of neorealism. Waltz set out a seemingly elegant theory with both explicit assumptions and criteria for evaluating the theory's performance. His theory, by focusing on security maximization rather than power maximization, appeared to fix the fundamental problem of Morgenthau's realism, namely the existence of the security dilemma. Neorealism appeared to offer a rich argument and certainly stimulated a wealth of new ideas and new research. Neorealism offered the prospect of a progressive research program that could lead to cumulative knowledge. Though the remainder of this essay suggests that neorealism is falsified and superceded, based on its own criteria for judgment, we should not lose sight that the inquiries it has stimulated have advanced the field. Plausible hypotheses have been stated and, as is a natural part of scientific progress, these hypotheses are shown to be wanting theoretically and empirically. Therefore, we can infer that they are no longer contenders as an explanation of international affairs. Science progresses by eliminating plausible hypotheses. Neorealism has made important contributions along the path to progress in knowledge. Undoubtedly, every currently extant alternative theory, like neorealism, will eventually be supplanted by superior explanations. That is an important objective of all progressive research programs.

Neorealism: A Summary of Waltz's Theory

Neorealists, like their realist precursors, examine structural aspects of international politics. The distribution of power among the states in the international system is identified as a major factor determining whether international affairs are stable or unstable. Stability refers to circumstances in which the sovereignty of key states is preserved (Gulick, 1955). Instability refers to changes in the composition of the international system, especially changes involving the disappearance or emergence of consequential states, like major powers, following large wars. Consequential or key states are those whose assistance might be needed to counter-act a threat from a rival grouping of states. Sometimes I will refer to these states as *essential actors* to highlight their ability to turn a potentially losing situation into a winning one or at least into one that blocks adversaries from victory (Niou, Ordeshook and Rose 1989). That this is what Waltz has in mind seems evident from his definition of stability: "To say that an international-political system is stable means two things: first, that it remains anarchic; second, that no consequential variation takes place in the number of principal parties that constitute the system. 'Consequential' variations in number are changes of number that lead to different expectations about the effect of structure on units, the stability of the system, so long as it remains anarchic, is then closely linked with the fate of its principal members. The close link is established by the relation of changes in number of great powers to transformation of the system" (1979, pp. 161-162). In addressing threats to international stability, neorealism posits the following central assumptions:

1. International politics is characterized by anarchy;
2. States, as rational unitary entities, are the central actors in international
3. politics;
4. States seek to maximize their security above all else, considering other factors only when security is assured;
5. States try to increase their power if doing so does not put their security at risk.

Anarchy means that there is no supernational authority that can enforce agreements between states. Consequently, international politics involves self-help above all else. No state can count on any other for help except to the extent that others expect to benefit themselves by helping. The assumption of anarchy is equivalent to saying that international politics is played out as a non-cooperative game. Non-cooperative games are games in which promises are not binding and contracts are enforced by self-interest rather than by some external authority.

The second assumption claims that domestic politics within states are largely irrelevant to international politics. It is because of this assumption that neorealists argue that foreign policy needs to be considered separately from international politics. By assuming that the state is the central actor and that it is unitary and rational, neorealism puts aside internal factors, like those highlighted by bureaucratic or interest group perspectives, when dealing with issues that might jeopardize the state's survival.

The third assumption establishes the primacy of security above all other possible goals. It also establishes that states are not willing to trade away any of their currently assured security for other benefits. Other things of value are only pursued once security is assured. This assumption lends considerable predictability to behavior if international affairs in reality is consistent with these assumptions. Because all states are assumed to have the same goal, there is no need to worry about idiosyncratic factors like the personalities of individual leaders or the domestic political institutions that govern state behavior. Every state is a role player with the role dictated by its security needs and its position in the distribution of power among states. ¹

The final assumption tells us that states are always interested in increasing their influence over other states. No state is content to be weak, but states accept being weaker than they might otherwise be if pursuit of greater power could place their security at risk. This assumption places restrictions on the pursuit of power. The idea is that if a state becomes sufficiently powerful that other states foresee the prospect that their security will be threatened by it in the future, then they join together to deprive the growing state of the power to threaten them. So, an increase in a state's power can actually make the state weaker in the long run if the increase in power alarms rivals and mobilizes them to form an opposition alliance. A coalition or alliance of states is expected to come together to beat back a growing state if that state's power threatens to become large enough that others face a possible loss of sovereignty as a result of the growing power of the first state. This well-known element of the security dilemma which bedeviled earlier realist theories, is solved in the neorealist formulation by the presence of the third and fourth assumption. These two assumptions place a brake on the pursuit of power. Morgenthau (1978, p. 215, emphasis added) argued that, "Since the desire to attain a maximum of power is

universal, all nations must always be afraid that their own miscalculations and the power increases of other nations might add up to an inferiority for themselves which *they must at all costs try to avoid.*"

With his third and fourth assumptions, Waltz set out an important innovation over earlier realist thought. States are not assumed to seek power or to avoid a decrease in power at all costs. Specifically, the quest for power is assumed not to be worthwhile if it costs the state its current security. Power becomes an instrument for security in neorealism, while it was the goal of states in realism.

Together Waltz's four assumptions provide a parsimonious and powerful view of international politics. Several important hypotheses are said to follow from these assumptions. I focus here only on those that directly concern the risk of instability, especially instability manifested as either changes in the composition of the international system's membership or in large-scale war. The most important neorealist hypotheses about the threat of instability are as follows:

Bipolar systems are more stable than multipolar systems;
States engage in balancing behavior so that power becomes more or less equally divided among states over time;
States mimic or echo each other's behavior.

Criteria for Evaluating the Theory

Before examining the logical coherence and empirical accuracy of neorealist claims about instability, I pause to review the criteria Waltz (1979) suggests for assessing his and all other theories. I will steadfastly apply these criteria as well, and from time to time, I suggest additional criteria. The additional criteria will always be *in addition* to the others, so as to be faithful to the epistemological requirements stipulated by the most important neorealist theorist.

Waltz (1979, p. 13) proposes seven conditions that should be applied to all theory. These are:

1. State the theory being tested.
2. Infer hypotheses from it.
3. Subject the hypotheses to experimental or observational tests.
4. In taking steps two and three, use the definitions of terms found in the theory being tested.
5. Eliminate or control perturbing variables not included in the theory under test.
6. Devise a number of distinct and demanding tests.
7. If a test is not passed, ask whether the theory flunks completely, needs repair and restatement, or requires a narrowing of scope of its explanatory claims.

The first is a call for making the theoretical argument explicit. To do so, one must state all assumptions; that is, all restrictions on action that are needed to infer the logical implications of the argument. The second requires that hypotheses, that is, proposed relationships among variables, follow from the logic of the theory. The first two conditions, then, are a call for inductive or deductive logic bound by the

restrictions assumed by the theory. Subsequent additional or auxiliary assumptions are not ruled out by these two conditions, but the nature of such additional assumptions is circumscribed. They may be additions to but not replacements for the existing assumptions. The existing assumptions are what define a theory and so are the constituent elements of Waltz's first condition. New assumptions can be added, thereby further restricting the domain of applicability of a theory, but the new assumptions cannot contradict the old ones. If they do, either they or some old assumption(s) must be abandoned to avoid incoherence. If even one old, core assumption is abandoned that is equivalent to the statement of an entirely new theory and not an evolutionary change in the old theory. The fourth condition requires that terms have explicit meaning and that the meaning is not altered from application to application or test to test or from one discussion of the theory to the next. With conditions one, two and four, Waltz has stipulated that theories must be clearly and explicitly defined. In the spirit of adhering to these conditions, I frequently quote Waltz's definitions in this essay to be clear about the meaning of his central concepts.

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The remaining four conditions concern the empirical evaluation of the hypotheses that follow from a theory. Waltz is careful to note that a single test should be regarded as insufficient to falsify or to confirm a theory. Thus the call for a number of distinct and demanding tests. Demanding tests presumably refer to tests that allow the researcher to distinguish between competing explanations of a phenomenon. When two theories make the same predictions about something, tests of those predictions provide no basis for choosing between the theories and so place relatively low demands on either theory. When two theories make different predictions about the same phenomenon, then a test of the explanation offered by each is demanding because at most only one of the contending theories can pass the test. If a pattern emerges across several distinct tests that systematically favors one explanation over another when all of the tests are demanding, then a choice can be made between the competing explanations. I will try to perform just such tests here.

Finally, the seventh condition recognizes the possibility that a theory can not be repaired and can be falsified. If a theory fails the many distinct and demanding tests and cannot be made to pass by the addition of auxiliary assumptions that are logically consistent with the core assumptions, then the theory is falsified. I will show that, at least in my judgment and given Waltz's criteria, this is the case for neorealism with regard to the three central hypotheses stated earlier. 3

The existence of some selected cases that are consistent with a theory's hypotheses is not, by itself, evidence that the theory is supported just as isolated cases that seem inconsistent with a theory are not a refutation. Such individual cases are not demanding tests. If some variable, such as the presence or absence of a balance of power between states, is hypothesized to increase or decrease stability, the observation of cases of a balance of power and of stability does not demonstrate that the hypothesis is correct. After all, if one observes fifty cases in which balance is accompanied by stability and fifty cases in which balance is accompanied by instability, then the correlation between balance and stability is zero. Correlation does not imply causation, but causation does imply correlation. Of course, the structure of the correlation may be simple or complex and contingent, depending on the specific

hypothesis, but that is another matter. The point is, the call for distinct and demanding tests is a call for more than the observation that a case or non-random set of cases fits the hypothesis. A single case is only convincing evidence when a theory stipulates necessary or sufficient conditions (or both) and a case is found that contradicts the claim without itself being controversial. Controversy might swirl around a case because of disagreement about its interpretation (i.e., measurement error) or because of disagreement about the appropriateness of the case as a test of the claim. Absent a case that incontrovertibly falsifies a claim, no case (or large N) can serve to confirm a hypothesis. Rather, the accumulation of supportive evidence over many cases (distinct and demanding tests), bolsters confidence in the claim. It is imperative to remember that if a hypothesized relationship is false in the sense of a zero correlation between the variables, then about half of all cases will, more or less, be consistent with the hypothesis and about half, again more or less, will be inconsistent with the hypothesis. Therefore, as I test neorealist empirical claims (i.e., hypotheses), I rely on large numbers of historical cases, rather than individual events. Neither the theory nor its hypotheses or empirical claims are about individual events. They are about patterns of relationships between key independent variables, like polarity, balancing and mimicking, and key dependent variables, like the survival of major powers or the survival of states in general.

How Well Does Neorealism Do in Explaining Instability?

The examination of neorealist theory proceeds in stages. First I investigate whether the core hypotheses stipulated earlier are logically implied by the four assumptions of the theory. Then I examine how well those hypotheses describe historical circumstances. If the neorealist hypotheses are not accurate descriptions of international affairs, then their logical status is not so important because they are wrong about the world in any event. If the hypotheses are logically implied by the assumptions of neorealism, but they are not consistent with actual state behavior, then they are of little interest and the theory's predictions are falsified. If the hypotheses are consistent with behavior, but do not follow from the assumptions, then we will want to think about how the assumptions must be altered to account for the observed facts. In that case, other implications will probably follow from the new assumptions. We will want to know whether those new implications are also consistent with the facts or not. Finally, if the hypotheses follow logically from the assumptions and if the hypotheses accurately account for behavior, then neorealist theory is a powerful tool for understanding international politics.

Bipolarity and Stability

A bipolar international system is defined in neorealism as a set of states dominated by two especially powerful states, with other nations concentrated around each of the two power blocs. A multipolar system consists of more than two especially powerful states. The great powers in a multipolar environment may also attract the support of other, lesser states. There must be more than two such concentrations of power in a multipolar system.

The neorealist definition of bipolarity and multipolarity leaves undefined some possible states of the world, so that there is ambiguity about some cases. For instance, if a system consists of six states of about equal power and those six states have organized themselves into two blocs, is this a bipolar system or not? Since the blocs are not each dominated by an especially powerful state, the configuration seems not to be bipolar, but then there are not more than two blocs, so it appears not to be multipolar. Probably neorealists would conclude that such a configuration is multipolar as the blocs are viewed as unreliable or temporary amalgamations. Having noted this ambiguity, I will focus exclusively on the definitions of bipolarity and multipolarity as stated in the theory so that I overlook the ambiguity. [4](#)

The argument that bipolar structures are more stable than multipolar ones is inferred largely from the claim that there is more uncertainty in a multipolar system than in a bipolar one. Waltz writes, "In the great-power politics of multipolar worlds, who is in danger to whom, and who can be expected to deal with threats and problems, are matters of uncertainty. In the great-power politics of bipolar worlds, who is in danger to whom is never in doubt (1979, p. 170)." Neorealists conclude that because there is less uncertainty in a bipolar world, fewer errors are made by the leaders of states in bipolar international politics. They know who their prospective supporters are and who their foes are. This is less true in multipolar environments. Therefore, according to neorealists, bipolar systems are more stable than multipolar systems.

Let us accept the argument that multipolar systems are more likely than are bipolar systems to require that decisions be made under uncertainty. Still, there is a considerable logical leap from the association of uncertainty with multipolarity to the association of multipolarity with instability and bipolarity with stability. Indeed, some have argued that multipolar systems are more stable than bipolar systems exactly because multipolarity produces uncertainty (Deutsch and Singer, 1964). It has also been argued that there is no particular reason to expect that bipolarity is more conducive or less conducive to stability than is multipolarity (Bueno de Mesquita, 1978).

There are several problems with the argument that because a bipolar system has less uncertainty than a multipolar one bipolarity therefore yields greater stability. To start with, this argument is not implied logically by the four key assumptions of neorealism. In fact, those assumptions say nothing at all about uncertainty or how uncertainty affects stability. So, to conclude that there is a relationship between uncertainty and the stability of the international system, we need additional assumptions.

In particular, we need an assumption about how states (or decision makers) respond to uncertainty. For instance, uncertainty might prompt states (or their leaders) to behave cautiously. Relatively greater certainty, by contrast, may inspire the more powerful nations to seize the opportunity to eliminate or diminish weaker rivals just because diminished uncertainty makes the opportunity more evident. If uncertainty provokes caution and certainty encourages someone to seize an opportunity, then bipolarity encourages instability. This is essentially the argument that led Deutsch and Singer (1964) to conclude that multipolar systems are more stable than bipolar systems.

In order to create the argument that bipolarity fosters stability, we can assume that

certainty makes states cautious while multipolarity and uncertainty makes states reckless or risk seeking. That is, we logically exclude the possibility that uncertainty breeds caution. So, all states, mimicking each other's behavior, could be assumed to be risk averse in the absence of uncertainty. While this is a strong assumption, it does solve the logical dilemma we face, and it is tautologically consistent with the third neorealist hypothesis that says states echo one another's actions. Furthermore, it is a view subscribed to in neorealist theorizing. ⁵ Whether it solves the logical problem we are confronting at the price of departing too much from reality is an empirical question to be resolved by examining evidence rather than making a judgment of whether we think the assumption is realistic or not.

The assumption that states are risk averse when faced with certainty but not when faced with uncertainty specifically precludes the possibility that different leaders or different states respond in different ways to certainty and uncertainty. Indeed, if leaders in different states react to uncertainty each in his or her own way, then we have three immediate problems. First, the unitary rational actor assumption of neorealist theory contends that important choices in international politics are driven by structural factors and not by considerations internal to the state. All structural or system-level arguments preclude just the sort of variation in leader proclivities regarding uncertainty that I am considering at the moment. So, this cannot be a fix for the neorealist argument. It violates a core assumption. Second, if different decision makers respond to uncertainty in different ways, then there is no reason to expect any empirical relationship between bipolarity and stability at all. Some leaders might be cautious when facing an uncertain situation while others might be reckless. If there is a roughly equal mix of states (or leaders) with reckless and with cautious reactions, then, on average, uncertainty would not have any systematic effect on the system's stability. Half the time uncertainty would prompt cautious, stability-enhancing actions and half the time it would make states more reckless. Naturally, this point of view requires that we weaken the assumption that states act as unitary rational actors and instead focus on differences in the characteristics of individual leaders. From time to time, new leaders may come to power in a given state and the new leader might differ from the predecessor in terms of how to deal with uncertainty. Third, if leaders differ in how they respond to uncertainty, then the third hypothesis, that leaders mimic one another, contradicts an assumption of the theory and so cannot logically follow from it. Therefore, the theory cannot tolerate the possibility that individual decision makers vary in their response to uncertainty. So, a repair that allows us to infer the first hypothesis is to assume that all states respond to uncertainty with greater recklessness than they manifest when there is no uncertainty and to assume that bipolar structures inherently produce less uncertainty (or no uncertainty) than do multipolar structures.

The bipolarity argument is problematic, however, even if we ignore its silence with regards to the willingness of states to take risks when facing an uncertain situation. The deeper problem is that the hypothesis that stability is fostered by bipolarity is inconsistent with the four assumptions of neorealism. To see that this is so, I must demonstrate that, taking neorealist assumptions into account, it is logically true that more distributions of power are stable in a multipolar world than in a bipolar world. Keep in mind that I am not now making an empirical claim. I am making a claim about the implications of the neorealist assumptions.

To prove this claim, and building on the efforts of Niou, Ordeshook and Rose (1989), suppose that there are 300 units of power in the international system. Two distributions of power are of interest when it comes to a bipolar world. If the distribution of power for bloc A and bloc B is exactly (150, 150), then neither state can destabilize the system by trying to take power away from the other bloc. Each is exactly powerful enough to prevent a defeat by its rival. Such a system would be very stable indeed, as hypothesized by neorealist thinkers. If, however, the distribution of power differs at all from (150, 150), then the system *must* be unstable according to neorealist assumptions, if not neorealist conclusions (Niou, Ordeshook and Rose 1989).

Suppose, for example, that the bloc led by nation A has 151 units of power, while B's bloc has 149. The system is practically balanced, but not quite. A wants more power according to assumption 4. It will not seek more power if doing so can put its security at risk (as indicated by assumptions 3 and 4). But, since power is the ability to make a rival do something it otherwise would not want to do, A has the absolute ability to force B to give up all of its resources (i.e., the 149 units of power). A is stronger than B. If B does not willingly give up its resources, A can just take them; in a bipolar world B cannot turn to anyone else for help because there is no one else. By taking B's resources, A increases its own power and does not place its sovereignty or its security at risk because it knows that it can beat B. That is what it means to say that A is more powerful than B. Therefore, except in the unlikely event that power is *precisely* equally distributed or believed to be precisely evenly distributed between rivals, bipolar systems are unstable according to neorealist logic. ⁶

One might object that my conclusion really depends on certainty about power being equally distributed. Recall that the introduction of uncertainty in the bipolar setting turns the argument for the stability of bipolar systems on its head. Bipolar systems, according to neorealist theory, are supposed to be devoid of uncertainty ("In the great-power politics of bipolar worlds, who is in danger to whom is never in doubt," p. 170). An argument that appeals to uncertainty to explain bipolar stability, then, contradicts the argument offered by neorealists to support the hypothesized link between bipolarity and stability.

Consider two different multipolar systems, each consisting of five nations (or blocs of nations). Call the nations A, B, C, D, and E. Imagine the following possible power distributions: (A=75, B=74, C=75, D=74, E=2) or (A=78, B=74, C=73, D=73, E=2). According to the assumptions of neorealism, what can we say about the stability of these systems? They appear to be quite similar and yet, neorealist logic implies that one of them is stable with respect to the survival of the states in the system and could, but need not, lead to a stable distribution of power. In the other, the survival of all the states cannot be assured if we follow the implications of neorealist assumptions.

The first system (75, 74, 75, 74, 2) is sufficiently stable that no country can be eliminated from the international system, not even state E, given the current distribution of power, although E holds only 2/300ths of the total power. Nation E is important in this system because it can help some states to build a coalition strong enough to protect themselves from defeat by any remaining combination of rivals. Nation E can help itself and other states enhance security. E turns out to be essential

to the preservation of the structure of this system. 7

Any combination of states with power totaling more than half the available capabilities can defeat any combination of opponents. For hypothetical systems with 300 units of power, any combination of states that is greater than 150 can defeat the remaining states. Each state has an incentive to prevent the formation of such a coalition if the alliance excludes the state. By forging a *blocking coalition* of 150 power units (that is, if R =resources, the blocking coalition must equal $R/2$) all the states can assure their security in the sense that their survival is assured. The reason that the earlier bipolar system with 150 power units per bloc was stable was exactly that each pole formed a blocking coalition with $R/2$ units of power.

In the first illustrative multipolar system, nation E might align with nations B and D ($74+74+2=150=R/2$) against A and C. That arrangement is stable in that neither side is strong enough to eliminate any state. Each state is essential because each state can turn a losing coalition into a winning coalition or a blocking coalition. Notice that if A, for instance, attacked E, other states would join to defend E and defeat A. They would do so because if they did not, their own security would be diminished by the lost opportunity to form a blocking coalition with E or a subsequent winning coalition against A. By ignoring E's plight, C and D place their own future security at risk, something they would not do according to the assumptions of neorealist theory. Less obviously, B also places its future security at risk in such a situation. Under the assumptions of neorealism, there is no sustainable additional benefit in terms of security for B (or anyone else) once the power configuration is such that a coalition with $R/2$ resources can form. When such a distribution forms, the power distribution may or may not remain stable, but all of the states will survive because they all play a crucial role in helping to preserve someone's security. There is no need to redistribute power to assure security, though security could be assured even if the power were to be redistributed. For instance, a redistribution to (75, 75, 70, 70, 10) would also be stable in terms of protecting the survival of each state as would a redistribution that gave any one state 150 units of power.

In the second illustrative multipolar system ($A=78$, $B=74$, $C=73$, $D=73$, $E=2$) there is no combination of states that cares to insure the survival of nation E because no state requires E's assistance to form a blocking or winning coalition. Nation A can form a winning coalition by just joining with B, or if B is not willing, by aligning with C or D. Adding E to any of these coalitions is superfluous. B likewise can forge winning coalitions by aligning with A or with C and D. C and D of course are included in an option for A and an option for B. No winning or blocking coalition that would otherwise be a losing coalition can form by adding nation E to it. Consequently, E is expendable. A, B, C, and D have assured security — they are each essential in at least one blocking or winning coalition — but E is inessential. Not even E's survival can be assured.

We can see how this second illustrative system might evolve by applying the rules of neorealism to it. A and D might threaten to gobble up B, C, and E. D will only agree to do so if at the end of the ensuing war both A and D control half of the remaining resources or units of power. They would each require an equal number of units of power at the end of the fighting. If either took less it would be destroyed by its erstwhile ally as soon as the war was over. B, C and E obviously are unhappy with this

state of affairs. B and C might approach the leader of A and offer a deal at least as good for A as a proposal by D to form an alliance and destroy B, C and E. B and C (or either one of them), might suggest that A destroy E, giving A 80 units instead of 78 and, in addition, B and C might each give A an additional 35 units of their own power, say by transferring territory or some other tangible source of power. 8. Then A would possess 150 units without having to fight a big war against B, C and E and without having to take the risk that D might come out ahead of A in the war. Under this arrangement, while B and C sacrifice power, they assure their survival because once A has 150 units of power ($R/2 = 150$), the surviving states are all essential. The new distribution of power might be (A=150 B=39, C=38, D=73) or, perhaps (A=150, B=74, C=3, D=73) or any of a number of other possibilities.

In summary, state E is an essential actor in the first hypothetical multipolar system. No one can afford to see state E eliminated. That would needlessly place someone's future security at risk in direct violation of assumption 3. In the first system, for any winning alliance that could form, there is a counter proposal that some other state can make to offer a better deal (that is, more security) to some member of the winning combination in exchange for their supporting some other, blocking coalition. And, in accordance with neorealist assumptions 3 and 4, such an offer will be made. Because of the possibility of switching alliances to get a better deal (i.e., anarchy), no state is expendable in this system and so the system's composition is stable, although the distribution of power may be subject to change.

The second system, although seemingly very similar to the first, is not stable according to neorealism because there is no circumstance in which E can survive that is consistent with neorealist assumptions. Other states can increase their power by destroying E without placing their security at risk. The key to stability, at least in terms of the survival of the states, is that each state is essential to the formation of at least one winning or blocking coalition. Sometimes, such states may survive while having to transfer some of their power to rival states, but at least all can survive. States that are inessential cannot survive and so the system's composition cannot be stable (Niou, Ordeshook and Rose 1989).

It should be evident that many different distributions of power in a multipolar system can be stable, while others would not be. Among the potentially stable multipolar systems, at least in the sense that every state can survive, we must include a system in which power is perfectly evenly distributed among the member states, just as was true for the bipolar world. Such a multipolar system, however, is subject to power being redistributed away from perfect equality if there is an odd number of members. This is so for any odd numbered system with more than one bloc and with an equal distribution of power because a blocking coalition with $R/2$ resources that insures the survival of all states cannot be formed without redistributing resources in that case.

Stability in a multipolar world is not limited to the situation of exact power equality. It should also be evident that only a perfectly balanced bipolar system can be stable; any other must be unstable according to neorealist assumptions. Thus the neorealist hypothesis that bipolarity promotes stability while multipolarity promotes instability is logically false given the assumptions of the theory. Further, a true balance of power is essential for stability in a bipolar world, but not in a multipolar one, contradicting the second hypothesis. A vast array of power distributions produce stability so that in

a multipolar environment, an exact or even approximate balance of power is irrelevant. There is no particular reason for the distribution of power in a multipolar environment to gravitate toward balance. Either the balance of power does not matter in multipolarity or the term is defined to mean any system in which each actor is essential. In the latter case, the concept is close to vacuous as so many systems would then qualify as a balance of power.

One might object that the portrayal of the relationship between polarity and stability is too simple, since war or other means of taking a nation's power and threatening its sovereignty are all risky and costly business. The outcome is not a certainty, so probably the more powerful state or alliance of states cannot be sure of its advantage unless that advantage is large (Morgenthau, 1978). Otherwise, it might lose or might suffer such high costs in winning that any victory would be pyrrhic. In such a case, the bipolar system may still be stable even though power is not balanced between the rival camps. This argument seems appealing at first blush, but it contradicts fundamental aspects of the neorealist argument. I return to the bipolar example of instability to see why this is so.

Before providing a more elaborate assessment, recall that the basis for the claim that bipolar systems are more stable than multipolar systems hinged on the contention that multipolarity meant greater uncertainty than bipolarity. Now I am going to turn this contention on its head by asserting that uncertainty is especially a problem in bipolar systems. I do so in an effort to try to save the logical foundation for the hypothesis that bipolar systems are more stable than multipolar systems.

Suppose nation A thinks there is some chance (say P , where $0 < P < 1$) that it can defeat B at an acceptable cost. Then there is also a chance $(1-P)$ that A will be defeated by B in a contest to control their respective power or that the cost for victory will be too high. For convenience, I define P so that it equals the ratio of A's power to the sum of A's and B's power so that I treat the probability as the odds that A can beat B. Also for convenience, I ignore costs in most of the remainder of the discussion, though it should be evident that costs only shift individual thresholds for choosing to fight or not fight and do not alter my fundamental point. A will not try to take advantage of B if the following is true:

$$P(\text{Utility for A of Capturing B's Power} - \text{Costs}) + (1-P)(\text{Utility for A of Losing its Sovereignty to B} - \text{Costs}) < \text{Utility for A of the Status Quo in terms of maintaining A's level of security}$$

Suppose (without loss of generality) that A attaches a utility of 1 to capturing all of B's power and a utility of 0 to losing its sovereignty. Of course, A prefers capturing B's power to losing its own sovereignty. In accordance with neorealist assumptions, A also prefers capturing B's power to maintaining the status quo, but naturally, A prefers the status quo to losing its sovereignty. With these conditions in mind, I can rewrite A's rule for deciding whether to go after B's power or not as follows:

Rule 1: Attack B if $P > \text{Value of the Status Quo plus costs}$.

Rule 2: Do not attack B if $P \leq \text{A's utility for the Status Quo plus costs}$.

The decision A makes depends on how much it likes or dislikes its status quo level of

security. Some states, those who are weak and insecure, could under rules 1 and 2 attack the rival pole in a bipolar system even though the rival pole is stronger than they are, because P could be small and still be bigger than the value they attach to the status quo and anticipated war costs. Imagine, for instance, that the value of the status quo is 0.1 and costs are zero, for convenience. This is more than the value of losing sovereignty (0) and less than the value of gaining B's power (1). Then if P is 0.2 the rule for attacking B is satisfied. This is equivalent to saying that it is possible in a bipolar world for A to attack B when A's power is 60 and B's power is 240. That is what is implied by the measurement of P and the stipulation that $P = 0.2$ and that the utility for the status quo equals 0.1. Remember, $P = A's\ Power / (A's\ Power + B's\ Power) = 60 / (60 + 240)$ in this example. So we have an example in which A attacks B even though A's chance of success in gaining power is very small.

Other states, those that are especially happy with the status quo, might not attack B in a bipolar system even if B is much weaker than they are. That is, P might be very large and still be smaller than the value for the status quo, again assuming costs are zero for convenience. Suppose that the value of the status quo is 0.9, for instance. This too is greater than the utility of losing sovereignty for A and less than A's utility for gaining control over B's power. P might be equal to 0.8 and A still would not satisfy the rule for attacking B. So, A's power might equal 240 and B's resources might only total 60 and still A would not feel confident enough to seize B's capabilities, given that the status quo is rather good and the downside for A following its own defeat is disastrous.

Such conclusions make intuitive sense. The problem is that they contradict neorealist assumptions, since the fourth neorealist assumption limits the pursuit of increased power to just those situations in which national security is not at risk. As Waltz (1979, p. 126, emphasis added) has aptly noted in explaining neorealism, "In anarchy, security is the highest end. Only if survival is *assured* can states safely seek such other goals as tranquility, profit, and power. Because power is a means and not an end, states prefer to join the weaker of two coalitions. They cannot let power, a possibly useful means, become the end they pursue. The goal the system encourages them to seek is security. Increased power may or may not serve that end. . . . The first concern of states is not to maximize power but to maintain their positions in the system." Since the anarchic world almost never assures survival, it is rarely possible in the neorealist view for states to trade between security and other desirable goals. Yet, by assuming that the outcome of a contest for power is probabilistic rather than certain, we necessarily introduce tradeoffs between security (that is, the preservation of sovereignty) and the quest for power. With probabilistic outcomes we can imagine a probability of success large enough to warrant putting security at risk (and I gave an example where that probability of success might be quite low). Doing so violates assumptions 3 and 4. We then are not examining the logic of neorealist theory, but rather the logic of some other theory in which security is not of the utmost importance.

The first hypothesis of neorealism, that bipolarity leads to stability, does not follow from the stated assumptions of the theory. Still, we can save the hypothesis logically by introducing an assumption that says states always behave with caution when faced with clarity of information and generally behave recklessly when faced with uncertainty. Whether such an assumption is consistent with observed behavior is, of

course, another matter. We cannot save the argument by allowing the outcome of competition for power to be probabilistic because that requires that we contradict some of the core assumptions of the theory. Doing so also contradicts the hypothesis that states mimic one another's actions and deprives a balance of power of any privileged position in the calculations of decision makers. So, it is perfectly fine to add additional assumptions to rescue a theory, but the theory cannot be rescued by contradicting the basic assumptions or by contradicting other important parts of its argument. Therefore, we cannot maintain the neorealist argument and add the possibility that leaders choose differently about gaining power at the possible expense of security, depending on how much they value the status quo or based on how risky the outcome of pursuing more power might be. Still, with the assumption of risk aversion under certainty and risk seeking behavior under uncertainty we can tautologically conclude that destabilizing risks will be more likely in multipolar systems than in bipolar systems.

History and Neorealist Empirical Claims

Does it pay to try to save the bipolarity argument of neorealism? Is the record of history sufficiently consistent with the hypothesis that we should care to find some logical explanation for the stability produced by bipolarity? There are a number of ways to go about figuring out whether there is a strong historical relationship between the international system's level of polarity and its stability. I address several of those ways now, mindful of Waltz's (1979, p. 13) admonition that all theory, including neorealism, should be subjected to distinct and demanding tests.

One perspective that makes sense in light of neorealist arguments is to evaluate how long the structure of the international system remained unchanged under different configurations. There were several multipolar systems between 1648, when the modern state system is said by neorealists to have begun, and about 1945 when the bipolar system that ended around 1990 began. During the multipolar years, there were important changes in the system's structure arising as a consequence of alterations in the make-up of the set of nations who were major powers. Spain, for example, was one of the great powers during the sixteenth and seventeenth centuries, but it certainly was not among this elite group of states in the nineteenth or twentieth centuries. The United States is the most powerful state in the world today; it did not even exist in 1648 and it remained a relatively uninvolved state at least until the Spanish American War in 1898. If stability requires that the set of great powers remains unaltered, then each time the list of major powers changes we can say that there is a new multipolar system. That appears to be what Waltz had in mind when he wrote "The stability of the system, so long as it remains anarchic, is then closely linked with the fate of its principal members" (p. 162). Using Jack Levy's (1983) classification of great powers since 1492 (or especially since the modern state system is said to have begun in 1648) we can determine whether the longevity of the bipolar system was comparatively long or short.

Figure 1 shows the longevity of each system defined as the period during which the make-up or number of the major powers remained unaltered. [9](#) It is evident that the approximately 45 or so years of the bipolar international system was neither

unusually long nor unusually short. Many multipolar great power systems lasted longer and many lasted a shorter time. We cannot conclude on the basis of longevity of the major power systems that multipolarity produces less stability than the one instance of bipolarity.

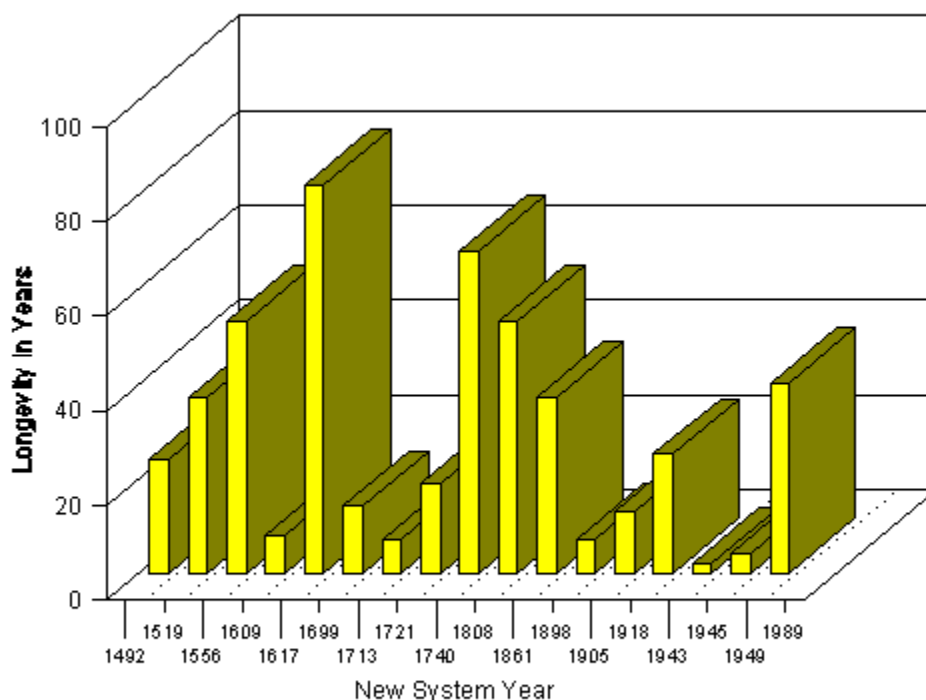


Figure 1: Stability of International Systems

Of course, the longevity of a given international structure is not the only way to think about system stability. Another way to evaluate the stability of the international system is to examine the frequency of wars among the major powers, the most influential states in the world. During the years that neorealists consider bipolar, there were two dominant powers: the United States and the Soviet Union. It is noteworthy that there was no war between these two dominant states during the bipolar years. Still, the United States and the Soviet Union each fought in several wars, just not against one another and there was at least one war between major powers during the bipolar years. The Korean War from 1950-1953 saw combat between the United States and China. China and Russia also fought repeatedly along their extensive border, with many casualties and deaths, though this is rarely elevated to the stature of a war. The United States, China and the Soviet Union, of course, were major powers, though only two were superpowers. The peace between the two superpowers has been described by the historian John Gaddis (1980) as "the long peace." Just how long a peace there was and whether it was due to bipolarity are both tricky questions.

With regard to causality, numerous changes in international affairs can be singled out to explain the so-called "long peace." Bipolarity is one, but there is no reason to think it more or less plausible a factor than several others. Consider, for instance, the advent of nuclear deterrence. Nuclear deterrence tends to push the international

system toward multipolarity, especially when several nuclear powers are each well-enough endowed to make the costs of an attack against them exceed the prospective benefits following a nuclear exchange. Nuclear weapons may well have raised the anticipated costs of instability well beyond any foreseeable benefit. The nuclear era, and its multipolar implications, coincides with the period of bipolarity and, unlike bipolarity, continues today.

Some might point to the creation of the United Nations in 1945 as a significant improvement over the pre-war League of Nations in helping to limit superpower warfare. Certainly the United Nations has been involved in numerous peacekeeping missions that have helped contain and resolve disputes that might otherwise have entangled the great powers. The United Nations' most powerful arm is the Security Council. Five great powers are permanent members of the Security Council. Each can veto any resolution brought before the Council and pretty much all major security issues do come before it. The Security Council, then, institutionalizes a multipolar decision making structure within the United Nations, providing a counter-weight to bipolarity as an explanation for the long peace.

Numerous other accounts for the peace between the great powers have been vetted (Mueller 1989). The advent of commercial television and common intercontinental air travel, for instance, have both also been claimed as pacifying developments that coincide with the origins of the bipolar system. Each brings people closer together and may foster greater cultural understanding. Of course, it could also be said that familiarity breeds contempt so we should not leap too quickly to endorse these or many other explanations as each has counter arguments. Still, bipolarity also has counter arguments at least as persuasive as the arguments in its favor.

This leaves the question of just how long the long peace really is. The easy answer is that during all 44 years between the end of World War II and the end of bipolarity there was no superpower war; there was peace in that limited but important sense. There were, however, only 36 years without a war between two major powers if we ignore the Sino-Russian border fighting, and there was barely a moment without some smaller war going on, often involving a major power. Recall that the Korean War involved major powers on each side. Additionally, the French fought in Indochina in the early 1950's, the French and the British fought against Egypt in the Suez War in 1956, the United States fought in the Dominican Republic, Vietnam, Grenada, Panama, and elsewhere, the Chinese fought India, Vietnam, and others, and the Soviet Union engaged in combat in Hungary, Czechoslovakia, Afghanistan, perhaps in the Ogaden, and repeatedly along its border against Chinese forces. None of these, however, may count as destabilizing. It is reasonable, then, to ask whether 44 years really is an unusually long time without a major power war. Again I turn to Jack Levy's (1983) compilation, this time on major power wars since 1492. I use the information he assembled to assess whether forty-four years is "the long peace."

Levy's data remind us that thirty-eight years passed without major power war from the end of the Napoleonic Wars (1815) to the beginning of the Crimean War (1853). Forty-three years passed between the end of the Franco-Prussian War (1871) and the beginning of the first World War (1914) without an intervening major power war. ¹⁰ Other lengthy intervals without major power war can be found scattered throughout the past several centuries. Perhaps, however, some of these wars are not significant

enough to have destabilized the system (though modern Germany was borne out of the relatively small Seven Weeks War (1866) and the Franco-Prussian War (1871)).

To evaluate this I look at the record of general wars. Levy identifies seven general wars since the Treaty of Westphalia: the Dutch War of Louis XIV (1672-1678), the War of the League of Augsburg (1688-1697), the War of the Spanish Succession (1701-1713), the Seven Years' War (1755-1763), the French Revolution and Napoleonic Wars (1792-1815), World War I (1914-1918) and World War II (1939-1945). In terms of general war, which seems to be what neorealists have in mind, the average interval between them has been thirty-four years, and the longest interval was ninety-nine years, well above the current period of peace since the last general war. It appears, then, that "the long peace" is not all that unusual after all.

Other Neorealist Hypotheses and the Historical Record

Still another way to assess the predictive accuracy of the neorealist structural perspective is to examine carefully what does follow logically from the assumptions of this point of view. Then we can determine whether the hypotheses that do follow logically from the theory are historically accurate or not. Several careful studies of the logic of neorealism have been conducted and have derived anew some hypotheses that more casual treatments have identified and also yielded some new hypotheses that they had missed. Emerson Niu, Peter Ordeshook and Gregory Rose (1989), for instance, have carefully traced out the logic of neorealism. They reach four central conclusions from that logic. Their four conclusions, proven as theorems, given their representation of neorealism, are:

1. Essential states never become inessential.
2. Essential states are never eliminated from the international system.
3. Inessential states never become essential states.
4. Inessential states are always eliminated from the international system.

By essential states, recall, they mean any state that can join a losing coalition and, by dint of its membership, turn that coalition into a blocking coalition or a winner. That is exactly the way I used the term earlier in constructing examples about the stability of multipolar and bipolar systems. Inessential states are states that cannot turn even one losing alliance into a winning or blocking combination.

Although Niu, Ordeshook and Rose show that these hypotheses follow logically from neorealist assumptions, each is historically false. Austria-Hungary was an essential state at the outset of World War I. By war's end it not only became inessential; it ceased to exist. Likewise, the Soviet Union was an essential state throughout the Cold War. Indeed, it was a superpower. Today it does not exist. In fact, it willingly and peacefully gave up its sphere of influence and its status as a great power. It is not yet clear whether any of its successor states, especially Russia, have reduced their power to insure survival or are themselves inessential and possibly doomed to extinction. The United States in the nineteenth century was an inessential state. Obviously, today it is an essential player on the world stage; it is the lone superpower in the world. Many other examples can be given to show that the four hypotheses Niu, Ordeshook

and Rose identified from neorealist logic simply are not consistent with history.

Bueno de Mesquita and David Lalman (1992) also constructed a formalized version of neorealist theory. They focused attention on the demands between states that form the core of international disputes. According to neorealist logic these demands between states must be chosen to protect security and enhance national power. Therefore, what is demanded (and what is not) depends on the structure of the situation in which the state finds itself. That is, demands in the international arena are the result of strategic choices; they are endogenous. ¹¹ Because demands are chosen taking the logic of the situation into account, nations would never knowingly choose actions that lead to a war that places their survival at risk, as Bueno de Mesquita and Lalman prove within the context of what they call the *Realpolitik* version of their international interaction game (hereafter IIG). What is more, numerous other game theoretic examinations of war (Powell 1990; 1999; Fearon 1995; Morrow, 1997) within a structural perspective also prove that war does not arise without uncertainty, seemingly in support of neorealism's claim about bipolarity (remembering that bipolarity really is a surrogate for the absence of uncertainty and multipolarity is a surrogate for the presence of uncertainty). In fact, states would only knowingly choose actions that protect the status quo or that lead to the negotiated resolution of differences if they did not face uncertainty and they lived within a neorealist world. From this perspective, Bueno de Mesquita and Lalman identify another three hypotheses that follow directly from their representation of the logic of neorealism. The three central neorealist hypotheses that they deduce are:

1. Uncertainty promotes war and certainty promotes negotiations or the status quo.
2. Regardless of information circumstances (uncertainty or certainty), no nation will ever acquiesce peacefully to the demands of another state.
3. A necessary, but not sufficient, condition for war is that both parties to the war believe their chances of winning are better than fifty percent.

The record of history does not support any of these hypotheses either.

Using Bueno de Mesquita and Lalman's data, I show that there is not a straightforward historical relationship between uncertainty and the risk of war, as is evident from Figure 2. As uncertainty increases, first there is a statistically significant increase in the likelihood of war, followed by a significant decrease in the risk of war at moderate to high levels of uncertainty. At extremely high levels of uncertainty, the probability that disputes turn into war turns sharply upwards. For most of the range of degrees of uncertainty, the probability of war stays well below twenty percent, rising above that level only under truly extreme conditions. The two periods during which uncertainty was so high that it predicted war with near certainty are 1866 — when Prussia, Austria and several smaller German states fought the Seven Weeks War — and 1966-1968, when Cold War tensions were very high in the build-up to the Soviet invasion of Czechoslovakia. In the mid-1860's as in the mid-1960's, long established ties among nations were under great strain, making leaders more uncertain than usual about who they could or could not count on. In both general instances of extremely high uncertainty it is interesting to realize that the associated conflicts were among states allied to one another. In the 1866 cases, the states involved in the Seven Weeks War were all members of a mutual defense pact with one another. That was also true of many of the cases of tension under high uncertainty in

the 1966-1968 period. Conflict among allies precipitates uncertainty because it is difficult to evaluate how states will choose sides between the belligerents given the great similarities in their discernible foreign policy commitments (Bueno de Mesquita, 1981).

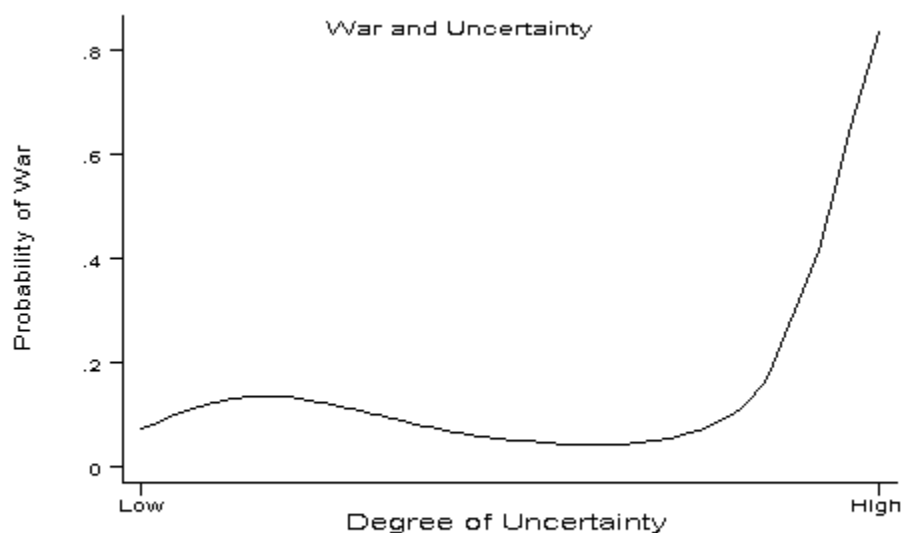


Figure 2

The risk of war and other destabilizing international interactions is not straightforwardly linked to changes in uncertainty. Bueno de Mesquita and Lalman, for instance, show that a particular type of state that they call a *pacific dove* is especially likely to initiate the use of force when it is very weak relative to its adversaries provided it is uncertain whether its opponents are also pacifically inclined. In most other instances, however, it is the strong rather than the weak who are likely to initiate violence according to the results reported by Bueno de Mesquita and Lalman (1992). The prospect that the status quo will continue or that disputes will be resolved through negotiations also is not closely linked to the level of uncertainty. Bueno de Mesquita and Lalman show this using data from 1816 to 1974. Their *Realpolitik* deduction that reductions in uncertainty should increase the odds of peaceful solutions to disputes is a more general form of Waltz's contention that bipolarity reduces the threat of instability. Therefore, the failure of Bueno de Mesquita and Lalman's neorealist proposition to find support in the historical record is quite troubling for neorealist claims, especially in light of all of the other evidence against the hypothesis that bipolarity promotes stability.

The second hypothesis derived from the *Realpolitik* variant of the IIG, which concerns the impossibility of a state ever choosing to give in to another state's demand without either negotiating a compromise or fighting to protect its interests, is also historically false. That nations do acquiesce to the demands of others is evident. During the Fashoda Crisis between Britain and France in 1898, for instance, Britain sought to control as much of the Upper Nile as possible. The French, however, controlled the town of Fashoda in the Sudan, exactly in the path of British ambitions. The British were unyielding in their demands. They wanted nothing less than a full acquiescence by the French and were prepared to go to war to pursue their ends. The French were in a militarily weak position and, given domestic dissatisfaction with the French

cabinet, the government was in a vulnerable political position indeed. Rather than risk a prolonged crisis and eventual defeat which would almost certainly have led to the downfall of their government, the French gave in. They recognized that their only real alternative was to resist, provoking a British attack which they did not have the strength to repel. In such a situation, they were better off acquiescing, thereby trying to save their domestic political position, than facing a humiliating military defeat. ¹² Contrary to the logic of neorealism, but consistent with the domestic variant of the international interaction game, acquiescence was not impossible; in fact it happens quite often in international affairs.

A common claim among some neorealist theorists is that war only occurs when both sides believe that their chance of winning is greater than fifty percent (Blainey 1973). This is a partial statement of what has come to be known as the balance of power theory. Many eminent scholars and statesmen suggest that when power is pretty evenly distributed then peace is likely, while an uneven distribution of power tends to increase the risk of war. To be sure, these scholars and statesmen sometimes disagree with one another about exactly what they mean by an even or balanced distribution of power. Some emphasize the distribution of power among the most influential states, while others emphasize an equal distribution between coalitions or blocs of states. These can be quite different.

To see how different they can be, consider the estimates of national power in Table 1. Table 1 shows estimates of the national capabilities, or power, of the seven states that made up the major powers in 1896. The table also shows the capabilities of three blocs of nations that represent the major power blocs in 1896 based on calculations of the similarity in military alliance commitments among these most influential of states. The data are all drawn from the Correlates of War Project. Looking at the capabilities of each of the major powers paints a quite different picture than does looking at the capabilities of the three major power blocs. The individual states were quite unequal in their relative power. Britain alone controlled over twenty-eight percent of the capabilities of the major powers. Japan had less than five percent and Italy just barely more than five percent of the major power capabilities. Yet, the bloc that Italy belonged to (including Germany and Austria-Hungary) possessed almost thirty-five percent of the capabilities of the major powers. The second bloc, which included Russia, Japan, and France, controlled just under thirty-seven percent of capabilities, with Britain, as already mentioned, in possession of the remaining twenty-eight percent. One easy way to measure how unequally divided power was is to add up the absolute difference between the power of the average nation (or coalition of nations) and the power of each individual nation (or coalition of nations). ¹³ If every unit had exactly the same amount of power, this method would add up to zero. If one state (or coalition) had all the power and the others had none (the most unbalanced system possible) this method would add up to 100. Focusing on the individual major powers gives a total absolute deviation of 49.5 percent, reflecting great inequality in the distribution of power among the major states in 1896. Focusing on the major power alliance blocs of 1896 suggests that the system was much more balanced. In fact, the sum of the absolute deviations from the mean for each bloc is only 10.3 percent. So, the exact meaning of balance itself can profoundly influence whether we interpret a system as being balanced or unbalanced. Unfortunately, contrary to the epistemological strictures set out by Waltz, neorealism does not provide a precise and

explicit definition of the concept “balance of power.”

It turns out, by whichever means we measure the balance of power, there is no systematic relationship between the likelihood of war and the balance of power. This fact has been demonstrated by Singer, Bremer and Stuckey (1972), Organski and Kugler (1980), and Bueno de Mesquita and Lalman (1988) among many others. Nor is there a significant association between estimates of the probability of victory for either side in a war and the likelihood that there would be a war. As Table 2 shows, the evidence fails to support the neorealist hypothesis that it is necessary (but not sufficient) for war that each side thinks its chance of victory is greater than fifty percent.

Table 1: The Major Power Balance of Power in 1896			
Country	Power	Bloc	Power
Germany	21.4%	Germany & Austria-Hungary & Italy	34.9%
Austria-Hungary	8.4%		
Italy	5.1%		
Russia	17.3%	Russia & Japan & France	36.9%
Japan	4.6%		
France	15.0%		
Britain	28.2%	Britain	28.2%
Total	100%		100%

Table 2: Is A Greater than Fifty/Fifty Chance of Victory a Necessary Condition for War?		
Did War Occur?	Initiator's Probability of Victory > 50%	Initiator's Probability of Victory < 50%
Yes	52 (13.1 %)	37 (11.9%)
No	345 (86.9%)	273 (88.1%)

Source: Bruce Bueno de Mesquita and David Lalman. *War and Reason*. New Haven: Yale University Press, p. 70.

If the neorealist hypothesis were correct, then the entry in the cell of table 2 that corresponds with the row labeled “Yes” and the column labeled “Initiator’s Probability of Victory < 50%” would be zero because that cell violates the hypothesized

necessary condition for war. Not only is it not zero, but it is not meaningfully closer to zero than the cell that corresponds to "Yes" there was a war when the "Initiator's Probability of Victory > 50%." Table 2 takes into account all cases of disputes within Europe between 1816 and 1974 so is a rather broad-based test of this neorealist claim. Again, the evidence forces us to conclude that neorealism's hypotheses about war and stability are not supported by the record of history. One can object that the measurement is too error prone, though the same data have also been used by Paul Kennedy (1987) and many others. If measurement is an issue, then advocates of neorealist views should identify acceptable indicators of the distribution of power so that appropriate distinct and demanding tests can be performed..

Applying Waltz's standards for evaluating theories, I conclude that the theory's central empirical claims are false. I have reviewed and presented numerous distinct and demanding tests. I have used the definitions provided by Waltz whenever possible. I showed that the central hypotheses do not follow from the stated assumptions. Taking that into account, I have examined ways to modify the theory and then tested the refined propositions. These modifications proved wanting in that either they contradict core assumptions or they prove wanting empirically. In light of the criteria stipulated by Waltz it is difficult to see how we can avoid the conclusion that the neorealist view is falsified. Still, we should not abandon neorealist theory unless we can demonstrate at least one alternative that does better. In the section that follows, I briefly discuss an alternative theory that, on empirical grounds, can be said to supercede neorealism.

The International Interaction Game and War

Earlier I introduced the neorealist version of the international interaction game (IIG). Bueno de Mesquita and Lalman (1992) also proposed an alternative theory in which policy demands and threats are motivated by domestic political considerations, but choices of action are shaped by the international context. Now I examine a few of the predictions from that theory — the domestic IIG — more carefully. The game they propose identifies eight generic possible outcomes from international interactions: the status quo, negotiations, acquiescence by one side or the other, capitulation by one side or the other, and war started by one side or the other. They also propose seven assumptions that define restrictions over the possible ordering of preferences for each decision maker across the eight outcomes. These assumptions can be found in their 1992 book.

The domestic version of the international interaction game assumes that leaders select their policy demands based on the domestic political pressures they need to satisfy to retain their jobs. This produces one fundamental difference between the IIG's neorealist variant and its domestic variant. In the neorealist version it is not possible for a decision maker to prefer to compel a rival to capitulate rather than negotiate with the rival. This is so because demands are assumed to be shaped by the structure of the international situation without regard to domestic politics. States choose demands to minimize the risk that they will lose security. Being forced to capitulate following an attack reduces a state's security by compelling it to give in to whatever the adversary has demanded and also to bear a cost in lost lives and

resources in the process. To avoid these losses, each state is assumed to structure its response to the adversary's demand so that the state offers just enough concessions to make the would-be aggressor decide to negotiate a compromise settlement rather than use force. That is, each state chooses its own demands to make the adversary indifferent between seeking greater gains, but at a cost, rather than negotiate. By negotiating, the potentially aggressive foe gains less in terms of policy than it might have by using force, but it conserves resources by avoiding the costs it must endure as a consequence of its attack, thereby protecting its current security. As long as the expected utility from negotiating is at least as large as the net expected utility from attacking, the rival is steered toward negotiation and away from aggression. ¹⁴ This leaves the rival no worse off and it leaves the state that chose its policy proposals to avoid being forced to capitulate better off.

In the domestic version of the IIG, by contrast, while it is possible to make demands that convince the other side to negotiate rather than attack, the assumptions of the theory do not preclude the possibility that one state's leader will prefer to force a capitulation rather than negotiate. Therefore, the domestic IIG allows some preference orderings that the neorealist version precludes, namely any orderings in which forcing a capitulation is preferred to negotiating. Be careful not to get confused here. In either version of the IIG, any state prefers to negotiate rather than capitulate itself. The difference is not in choosing to capitulate or to negotiate, the difference is that in the domestic version a state can want to make another state capitulate while in the Realpolitik variant, it cannot end up preferring to force a capitulation over negotiating. The domestic IIG labels actors as doves if they prefer to negotiate with a rival rather than force the rival to capitulate. Hawks are defined as actors who prefer to force a rival to capitulate rather than negotiate with them.

The existence of hawks as well as doves in the domestic version of the international interaction game produces fundamental differences in predictions about war. Bueno de Mesquita and Lalman prove what they call the IIG's *Basic War Theorem*. This logical implication of their game states that war can be a subgame perfect Nash equilibrium of the IIG. This means that the game contains conditions that are both necessary and sufficient for war under complete and perfect information. War is the complete and perfect information equilibrium outcome of the domestic IIG provided four conditions are fulfilled that are logically permitted, but not required, by the assumptions of the game. These conditions define a subset of the 2704 logically admissible pairs of preference orderings over the game's outcomes. These conditions are that

1. player A prefers to initiate a war rather than acquiesce to the demands of the opponent;
2. A prefers to capitulate if attacked rather than retaliate and fight a war in which the adversary gains the advantages of a first strike;
3. player B prefers to fight a war started by A rather than capitulate to an attack by A; and
4. B prefers to force A to capitulate rather than negotiate with A.

Condition (4) is not possible under the neorealist version of the IIG because when demands are chosen strategically within the international framework, this is the preference by a foe that each actor worries about and so takes action to offset. That

action, again, is to make a demand or offer concessions that persuade the would-be aggressive rival that negotiating is at least as good for her state as is trying to force a capitulation. Negotiation is always better for the state that otherwise would have had to capitulate. Negotiation allows the state to avoid the physical costs of being attacked and negotiation provides the state with some chance ($0 < P < 1$) of getting part of what it wants. There is no such chance if the state is compelled to capitulate.

The logical possibility of war under complete and perfect information is controversial. A simple way to think of how such a situation could arise when all players know that all players prefer to negotiate rather than fight a war is to think of a situation similar to a prisoner's dilemma arising in the part of the game known as the crisis subgame. What happens, in essence, is that the threat of being forced to capitulate can lead a state to initiate war if it has a large enough first strike advantage. Knowing that the rival will take advantage and force a capitulation if the state offers to negotiate, and knowing that it has a valuable first-strike advantage of its own, the state may decide to initiate fighting rather than cede the first strike advantage to a belligerent foe. The derivation of conditions under which war is logically possible with complete and perfect information also implies important differences between the domestic IIG and neorealism.

We have already seen that neorealist theorists suggest that uncertainty in the form of multipolarity increases the risk of instability (and war is often a source of and symptom of instability). In contrast, Bueno de Mesquita and Lalman report conditions under which uncertainty promotes peace and stability, while certainty (or improved information) makes war more likely and they note other conditions under which uncertainty promotes instability. So, the IIG leads to the inference that the impact of uncertainty on instability is contingent on other factors contained within the IIG. To see how uncertainty can promote peace and stability let us look more carefully at the basic war theorem of the IIG.

If the IIG's logically necessary and sufficient conditions for war are met, then war is expected to take place. Suppose that the four conditions of the basic war theorem are met in the sense that if preferences were common knowledge, then the conditions for war would be satisfied. Suppose, however, that because of uncertainty, rivals do not know the preferences over outcomes held by their adversaries so that there is incomplete information. This uncertainty reduces the likelihood that the choices made will end in war. If at least one leader mistakenly perceives that the rival's preferences are anything other than what is stated in the basic war theorem, then the risk of war must be reduced by uncertainty. This must be true if the theorem is correct because the probability that an action will be taken when its necessary and sufficient conditions are met is 1.0 (by definition). The theorem, of course, stipulates complete and perfect information. If complete information is absent, but the rest of the theorem's conditions hold, the necessary and sufficient conditions for war as stated above are no longer satisfied because one or both players have mistaken beliefs about the other's expected payoffs. In that case, the probability of the relevant event or action can only decrease as a result of the decision maker's uncertainty.

Similarly, it is possible for decision makers to mistakenly perceive that the conditions for war are met so that their interaction is ripe for war. If the conditions for war under complete and perfect information are not met, but because of uncertainty,

leaders believe those conditions are met as a result of a mistaken belief about the preferences of the rival, then uncertainty increases the risk of war because without uncertainty there would be no chance of war at all. Thus, uncertainty should not always have the same effect on the risk of war-created instability in the international system if the IIG hypothesis is supported. Rather, uncertainty can increase the risks of a destabilizing conflict and uncertainty can also decrease that risk, each under specific, identifiable circumstances. [15](#)

War and Uncertainty: The IIG and Structural Theories

Bueno de Mesquita and Lalman's results from their domestic IIG can be compared directly to the hypotheses of neorealism. In neorealism, uncertainty makes war (and other sources of instability) more likely and certainty makes war less likely. Put more broadly, the greater the degree of uncertainty, according to neorealism, the higher the probability of destabilizing events like war. By contrast, the domestic IIG identifies conditions under which increases in uncertainty make war more likely and conditions under which increases in uncertainty make war less likely. If the IIG's necessary and sufficient conditions for war under complete and perfect information are not met and there is complete and perfect information, the probability of war (or instability) should be zero, making the same prediction under these conditions as is made by the bipolarity hypothesis of neorealism. When the necessary and sufficient conditions for war under complete and perfect information are not met but there is not complete information so that there is uncertainty, then the international interaction game predicts that the probability of war increases. This is also the prediction made by neorealism. So, under two conditions, neorealism and the IIG make the same predictions about the likelihood of war (or other forms of instability) and under two other conditions neorealism makes predictions opposite to those of the IIG. This provides an opportunity to conduct a critical test. The accuracy of the alternative explanations of instability and conflict can be compared by examining the cases in which they make *different* predictions. Of course, we cannot choose among the theories on the basis of the cases where they make the same predictions. In those cases, if one is right so is the other and if one is wrong so is the other. Examining the cases where the theories differ in their predictions is a critical way to choose among theories. It is a demanding test. Both theories can be wrong, one or the other can be consistent with the evidence, but both cannot be supported by the evidence.

Evidence from European disputes since 1816 supports Bueno de Mesquita and Lalman's hypotheses, but refutes the alternative hypothesis about war and uncertainty. Figures 3 and 4 show the relationship between the probability of war and the level of uncertainty in the European system using Bueno de Mesquita and Lalman's (1992) indicators, for all disputes in that part of the world since 1816 and through 1974. In figure 3, the IIG's necessary and sufficient conditions for war under complete and perfect information are met and in figure 4 those same conditions are not met. In both figures, uncertainty varies from very low levels to very high levels. If neorealist predictions are supported, then both graphs will slope upwards because these theories predict that uncertainty is destabilizing and less uncertainty enhances greater stability. If the IIG is supported, then the first graph will slope downwards and

the second upwards. ¹⁶ Clearly, the two figures support the expectations deduced from the domestic version of the IIG in contradiction to neorealism's expectations. Re-evaluations of the claims of the IIG, using more advanced statistical methods or controlling for more potentially confounding factors, have been carried out by Signorino (1998), Smith (1998), Bennett and Stam (1998), Gelpi and Grieco (1998) and others. All of these studies reinforce the IIG findings reported here. Additionally, the IIG makes numerous predictions not made by neorealist theory so that, in a Lakatosian sense, it contains excess empirical content beyond that possessed by neorealism.

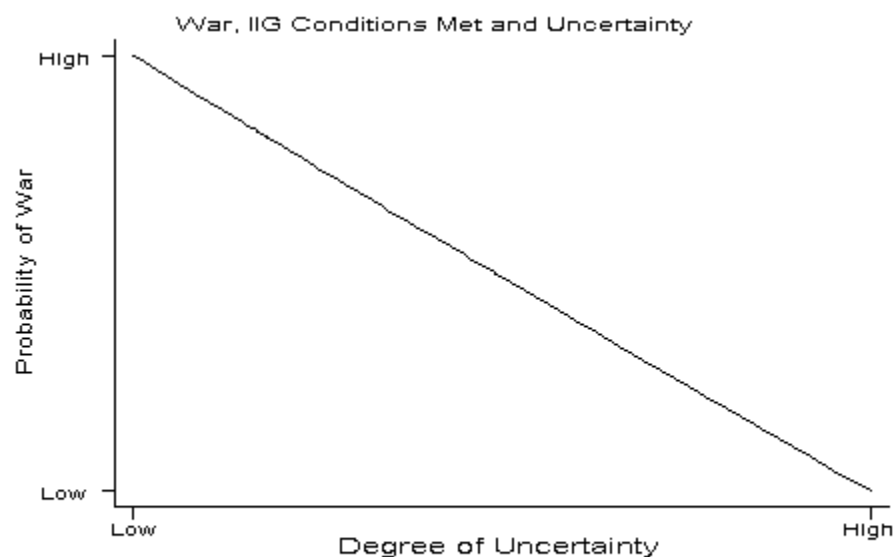


Figure 3

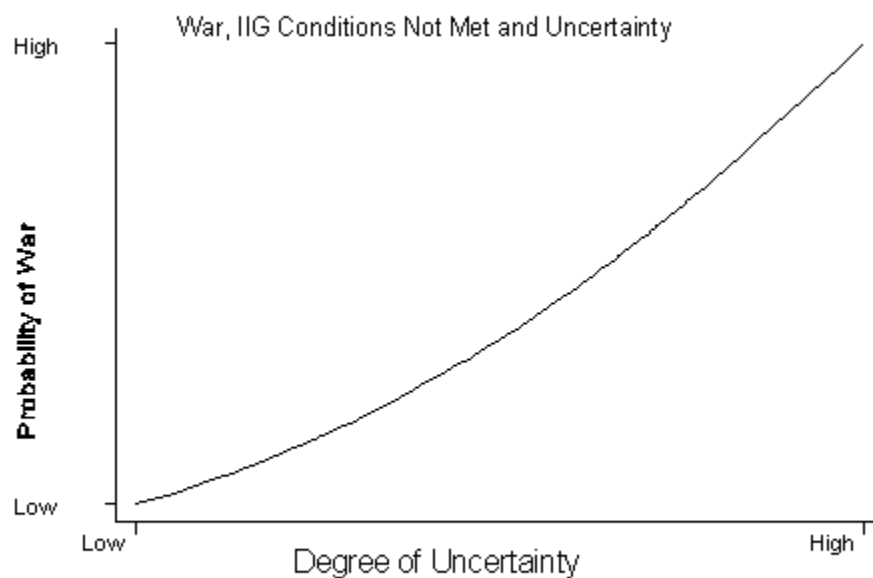


Figure 4

Summary

I have examined the central hypotheses of neorealism. I showed that the claim that bipolarity promotes stability, uncertainty provokes instability, states routinely mimic each other and a balance of power helps foster stability are logically flawed and are refuted by the historical record. These contentions must not be taken lightly or accepted casually. Yet, at least one alternative theory, the domestic variant of the international interaction game, was shown to be consistent with the historical facts that align with balance of power or neorealist arguments, while also being consistent with central facts that do not align with those other theories. The IIG accounts for the facts accounted for by neorealism, and also accounts for numerous other facts. It also produces novel, tested hypotheses that do not follow from neorealism.

So little evidence exists with which to sustain confidence in neorealist predictions that the burden seems to fall on those who wish to argue that neorealism is not falsified or superceded. Scientific progress is made by building progressively on the ideas we inherit, discarding the parts that clearly fail us when we find superior alternatives. Much valuable debate has been stimulated by neorealism and many useful insights have been gleaned from it. However, mindful of Waltz's rules for judging theories, I now urge us to abandon neorealist balance of power and polarity arguments. The logic behind several game theory treatments of international politics provide an alternative that meets the criteria to be viewed as improvements over the neorealist notions. They account for the facts explained by neorealism, but they also account for many facts not explained by that theory. I have performed here and elsewhere, and have summarized and reported here many distinct and demanding tests. We should not sustain theories out of affection or nostalgia for them, but only if the logic and evidence warrants doing so. If the tests conducted here are not convincing refutation, then those who believe in these structural theories should state clearly what, for them, would constitute a falsifying test or tests.

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Endnotes

*: I am grateful to James D. Morrow and Randolph Siverson for their helpful discussions and comments on this subject [Back](#).

Note 1: Space limitations preclude me from discussing the ways in which the burgeoning research on domestic institutions and international politics challenges central conclusions of neorealism. In this essay I examine other, more direct refutations of neorealist theory. For a summary of other studies that challenge the unitary actor implications of neorealism, see Bueno de Mesquita (1999). [Back](#).

Note 2: It is worth observing that the criteria set out by Waltz are broadly consistent with arguments in the literature on philosophy of science. As such, his ideas reflect a consensus about some key features involved in evaluating theories. [Back.](#)

Note 3: Others may disagree, of course. In that case, I urge them to state explicitly and clearly what standard of rejection they are applying so that additional distinct and demanding tests can be conducted to address their concerns. Neorealists tend to defend their theory with case history examples that purportedly support their perspective. Such studies, however, are not demanding tests. [Back.](#)

Note 4: This ambiguity was brought to my attention by Randolph Siverson. [Back.](#)

Note 5: Waltz notes, "The simplicity of relations in a bipolar world and the strong pressures that are generated make the two great powers conservative" (1979, p. 174). [Back.](#)

Note 6: Note that this argument is not circumvented by arguing that victory requires a larger margin of advantage in power as that simply shifts the location, but not the existence, of a knife edge condition under which bipolar systems are stable. If A has X units of power and B has $1-X$, and an advantage large that Y is required to destabilize the situation, then any distribution of power in which $2X-Y > 1$ is unstable and any distribution in which $2X-Y < 1$ is stable. Of course, if for one party $2X-Y < 1$ then, defining X in terms of the other party's resources, that party calculates that for the newly designated X, $2X-Y > 1$. So, stability only arises when $2X-Y=1$, a knife edge condition. [Back.](#)

Note 7: If nation E did not exist and the system contained 298 units of power without it, then the configuration would be stable. Any combination of 149 units, including a combination of 75 units and 74 units produces a stable blocking coalition. [Back.](#)

Note 8: To keep the example simple, I treat war costs as zero. The argument does not require this simplification. [Back.](#)

Note 9: Using Jack Levy's (1983) data, the periods during which the number of great powers remained fixed and the years during which the list of great powers remained fixed happens to be the same so that the figure shows the duration of systems both in terms of changes in the number and changes in the names of great powers. The multipolar systems varied in terms of the number of members from a low of four (1519-1556) to a high of eight (1905-1918) [Back.](#)

Note 10: One might object that there was an intervening major power war, the Russo-Japanese War. Japan's status as a potential factor in global power politics, however, was established by its performance in that war and did not predate the event. Still in some respects Japan had already attained great power status. In that case, the interval between the Franco-Prussian War and the Russo-Japanese War was 33 years. [Back.](#)

Note 11: Waltz maintains, "The elements of Realpolitik, exhaustively listed, are these: The ruler's, and later the state's, interest provides the spring of action; the necessities of policy arise from the unregulated competition of states; calculation based on these necessities can discover the policies that will best serve a state's

interests; success is the ultimate test of policy, and success is defined as preserving and strengthening the state" (p. 117). [Back.](#)

Note 12: Alas for the French politicians, their government fell from power anyway because of domestic considerations. [Back.](#)

Note 13: $Balance\ of\ Power = 100 \sum_{i=1}^n |Capabilities\ of\ i - \frac{1}{n}|$ [Back.](#)

Note 14: The procedure for identifying endogenously chosen demands is explained in Bueno de Mesquita and Lalman (1992), chapter 3. [Back.](#)

Note 15: The general result just explained does not depend on what theory is used to identify the necessary and sufficient conditions for war. That is, the result depends only on the existence of necessary and sufficient conditions under which an action or event is certain to happen and the existence of uncertainty. [Back.](#)

Note 16: The figures are based on a Logit analysis that estimates the likelihood of a binary dependent variable (War or No War in this case) as a function of a set of independent variables. The actual statistical test can be found in Bueno de Mesquita and Lalman (1992, p. 77 and a more demanding test version on p. 216). All relevant variables are statistically significant and in the direction predicted by the domestic version of the IIG. [Back.](#)