

# **Bargaining, War, and Alliances**

R. Harrison Wagner  
Department of Government  
The University of Texas at Austin  
rhwagner@mail.utexas.edu

September, 2000\*

### **Abstract**

The formal literature on the causes of war focuses on a choice by two states between war and a negotiated settlement, while writers on alliances and system stability tend to ignore the possibility of negotiated settlements in order to focus on coalition formation and the effect of the number of states in the system. Thus the literature on the causes of war is unable to investigate alliance formation or system stability, while the literature on interstate systems leaves unclear why war ever occurs. Balance of power theory, however, is concerned with both. As a way of clarifying and evaluating competing claims made by writers on the balance of power, I extend recent work on the relation between bargaining and war to a three-state setting where coalitions are possible. I show that if what is commonly called “balancing” occurs at all, it is because it is seen as a way of reducing the risk associated with possible exogenous changes in the distribution of military capabilities. It is therefore not necessarily inconsistent with what is called “bandwagoning,” but can actually make bandwagoning more likely. Moreover, balancing need not occur for international systems to be stable.

There have been several historical periods during which three or more territorially based political entities engaged in recurring military conflicts with each other over extended periods of time. The longest-lasting system of this sort was the state system that emerged in Europe after the collapse of the Roman Empire, which not only proved more stable than all the others but ultimately absorbed the rest of the world and thus became the foundation for the current international system. Controversies about how to understand such systems date from the beginning of the European state system, and still form the core of the contemporary academic field of international politics, at least as it is taught in the United States (Knutsen 1997).

One issue in these controversies is the stability of systems of this sort.<sup>1</sup> Contemporary international politics is dominated by political entities that are easily recognizable as successors to the ones that dominated international politics in earlier centuries. Beginning in the eighteenth century if not earlier, various writers have suggested that the explanation for this stability is that the independence of states is protected by a kind of hidden hand mechanism from efforts by some states to dominate the others. However, the ancient Chinese Warring States System succumbed to such efforts, as did the ancient Greek city state system and the subsequent Hellenistic one. Moreover, not all the members of the European system managed to maintain their independence. It is thus not clear how to explain the stability of the European system or evaluate the stability of the current one.<sup>2</sup>

Another persistent controversy is about the effect of such systems on human welfare. The most important cause of concern is the frequency of warfare in them, but the ability of independent armed political entities to pursue any common interests by cooperating with each other has also been called into question.<sup>3</sup>

The problem that these two issues have in common is how to understand war, since war is the main threat both to the stability of such systems and to human welfare. Debates about the role of war in both these contexts frequently go by the name of “balance of power theory.” Unfortunately the phrase “balance of power” is none too clear, and “balance of power theory” is a welter of vague assertions and counter-assertions rather than a well-

defined theory.<sup>4</sup>

The phrase “balance of power” sometimes means simply the distribution of military capabilities, and the issue is whether one distribution is more conducive to either peace or system stability than others. Sometimes “balance of power” refers to a situation in which military capabilities are distributed equally, and it is claimed that this is the distribution that is most conducive to peace or system stability. And sometimes “balance of power” refers to the distribution of military capabilities that results from the alliances that form in a world of more than two states, and the issue is what alliances one should expect.

Some scholars have claimed that because states want to maintain their independence, weak states can be expected to ally against strong ones (which is commonly called “balancing”). Others have claimed that states balance not against power but against “threats,” that strong states may gang up on weak ones (which is often called “bandwagoning”), or that states do not necessarily ally at all but may seek instead to sit on the sidelines and avoid military conflicts entirely.<sup>5</sup> Often it is assumed implicitly that system stability requires that weak states “balance” against the power of strong states, though we will see that this is not true.

The central focus of this debate in recent years has been Kenneth Waltz’s influential book, *Theory of International Politics* (Waltz 1979). In addition to reviving the old idea that “balances” result from the competitive behavior of states and not because any state aims for one (Waltz 1979, 117–123), Waltz introduced a new distinction between “bipolar” and “multipolar” systems, and claimed that bipolar systems were more stable than multipolar ones. Since Waltz wrote, some writers have discovered “unipolar” international systems, of which they claim the current system is an example (Kapstein and Mastanduno 1999), and Schweller (1998) has claimed that the international system that produced World War II was a “tripolar” one. Unfortunately, Waltz’s argument for expecting a difference between bipolar and multipolar systems was based on the simple fallacy of using premises that described the differences between two-actor and *n*-actor systems to support conclusions about the effect of different distributions of power in *n*-actor systems (Wagner 1993). More recent efforts to distinguish among other distributions of power by their “polarity” suffer from similar deficiencies.

Waltz’s discussion of these issues is often said to be a “deductive” theory of international politics, and many

<sup>1</sup>It would be useful to have a name for such systems but I do not know of a good one. Sometimes they are called “balance of power systems,” but this begs too many questions. The term “state system” is too restrictive since the components need not be states in the modern sense of the term, and in Europe initially they were not. “Interstate” or “international” systems are unsatisfactory names for the same reason.

<sup>2</sup>For a comparison of the history of Europe with the history of China that focuses on this question see Hui 1999.

<sup>3</sup>For many writers these issues are identical. The most influential work in this tradition is Jervis 1978. This question is discussed in Wagner 1999.

<sup>4</sup>A good summary of the various controversies that fall under this heading can be found in Claude 1962, chapters 1–3. See also Sheehan 1996.

<sup>5</sup>For recent surveys of these controversies see Schweller 1998 and Powell 1999. The claim that states balance against threats was made in Walt 1987.

criticisms of his work therefore focus on what are claimed to be his assumptions.<sup>6</sup> But in fact nothing in Waltz's book is deduced from anything else, and it is not even clear what the premises or conclusions should be if one wanted to try to restate what he said in the form of a deductive argument. Thus if one wants to know what conclusions on this subject can be derived from what premises one must look elsewhere.

The relevant literature falls into two parts, neither of which provides a complete answer to the questions raised by these controversies. One is the rational choice literature on war, and the other is the rational choice literature on balance of power theory and system stability. The analysis in the former is carried out entirely in a two-actor setting, and focuses on a choice between war and a negotiated settlement. Given such a choice, it is hard to explain why war would ever be chosen if its consequences were both certain and commonly known (Fearon 1995). The analysis in the latter, on the other hand, ignores uncertainty about the outcome of war in order to focus on the question of whether the expected consequences of eliminating some states might inhibit others from doing it and therefore lead to system stability (Wagner 1986, Niou and Ordeshook 1990). The framework employed in the literature on war thus prevents an analysis of alliance formation or system stability, while the framework employed in the literature on system stability makes it impossible to explain why wars would ever occur.

The state of our knowledge about this subject is illustrated by two important recent contributions to the literature, one by Schweller (1998) and the other by Powell (1999, chapter 5).<sup>7</sup> In a book that offers a systemic explanation of Hitler's foreign policy, Schweller argues that the international system prior to World War II was a tripolar system, where a "pole" is defined as a state with more than half the military capabilities of the most powerful state (Schweller 1998, 17). However, like writers on bipolarity, he tends to conflate the number of states with the distribution of power among them, and thus frequently assumes that a tripolar system is equivalent to a system consisting of three states (Schweller 1998, chapter 2).

Schweller criticizes the analysis of three-state systems in the rational choice literature on system stability, but he does so simply by making different assumptions about the ability of states to negotiate agreements, without a serious effort to establish why one set of assumptions is preferable to another. While he claims that "allies rarely double-cross their partners, even though game-theoretic logic says otherwise" (Schweller 1998, 48), he assumes that negotiated settlements are impossible. Yet he also assumes that if two states defeat the third, "the resources of

the victim are [always] divided proportionately among the winning coalition members" (Schweller 1998, 46). Alternative assumptions would lead to different conclusions, so it is important to know if these can be justified.

Moreover, while Schweller quarrels with the treatment of issues such as these in the literature on system stability, he retains that literature's assumption that "[a] stronger member or coalition defeats a weaker member or coalition" (Schweller 1998, 46) and thus tacitly assumes that the outcomes of wars can be known in advance. It is therefore hard to explain why states have to pay the costs of fighting them—like the literature on system stability he simply assumes that they must.<sup>8</sup>

Powell has developed a three-state model to evaluate competing claims about whether states should be expected to "balance" or "bandwagon" in making alliance choices, or avoid participating in conflicts instead. He finds that states may do all these things, depending on the circumstances, but that balancing is rare. He says that his model is "exploratory and tentative, and is, at most, an early step in a modeling dialogue" (Powell 1999, 151). However, it is an advance over the earlier literature in two main ways: it incorporates uncertainty about the outcome of war into the analysis, and contains a model of postwar bargaining between the two members of a victorious coalition in a three-state system. This model of bargaining is identical to one Powell used earlier to analyze the effect of the distribution of power on the probability of war between two states (Powell 1996; 1999, chapter 3). By incorporating it into a model designed to investigate alliance behavior in a three-state world he has created a hybrid model that incorporates some of the features of the rational choice literature on the causes of war and some of the features of the literature on system stability.

But Powell's hybrid model has the odd property that two states can reach a negotiated settlement after eliminating the third, while three states can only decide whether to fight or not. One might think that if two states can negotiate then three can as well, whereas if three cannot then neither can two.

In the analysis that follows I will investigate the effect of both these possibilities and ask when either might be true, focusing especially on conditions that prevailed in the eighteenth century when ideas about the balance of power first began to flourish. In the next section I will explore the implications of the possibility of negotiated settlements as alternatives to war in a world of three states. In the following section I will consider what factors might inhibit such settlements and their implications for system stability and the probability of war. I will then show that if what is commonly called "balancing" occurs, its most

<sup>6</sup>See, for example, Schweller 1998, 9.

<sup>7</sup>See also the extensive discussion of the literature and analysis of many of the relevant issues in Snyder 1997.

<sup>8</sup>This is implied by assumption 6 on p. 46, which says: "Resources are increased only by eliminating a member of the triad. States do not voluntarily cede resources."

likely explanation is to be found in the fact that the distribution of territory among states may affect the distribution of power, something that has always been emphasized in the literature on the balance of power. In such a context balancing can be explained as a means of reducing the risks states face as a result of possible exogenous changes in their military capabilities. However, this explanation implies that balancing may not be inconsistent with bandwagoning, but can actually foster it. I will conclude by examining the implications of the analysis for discussions of the “polarity” of interstate systems. Waltz’s claims about balancing versus bandwagoning are discussed further in a brief appendix.

## War and bargaining

Let us begin by considering a world that is populated with three territorially based political entities, each possessing organized military forces, and assume that each would benefit from eliminating the military forces of the other two. I will postpone discussion of what this benefit might be, and focus first on how it might be achieved.

One organization can eliminate the military forces of another by destroying its weapons and its capacity to produce them, or by rendering it incapable of functioning as an organized military force. If an organization that is attacked with such aims in mind wishes to avoid forcible disarmament it must try to protect its forces from such attacks and/or try to destroy the attacker’s forces. Which response it chooses will depend on what is feasible and on what its own aims are. Since for the moment I assume that all the organizations want to eliminate the military forces of the others I will assume that an attacker will be met by an attempt to destroy its own military forces and postpone a discussion of the possible significance of another response until later.

Thus an attempt by one organization to destroy the military forces of one or both of the others will lead to a military contest in forcible disarmament. I will assume that if not interrupted, such contests will ultimately lead to the disarmament of one side or the other, and unless the two sides are very unevenly matched neither can be certain in advance which outcome will occur. Moreover, the probability that either side will succeed will depend on the quantity of its military resources relative to those of its adversary.

Thus the distribution of power in such a situation can refer either to the relative probabilities attached to these two possible outcomes, or to the distribution of the military resources that influence them. As with other contests, there are therefore two problems associated with quantifying the distribution of power. One concerns how to measure the quantity of an organization’s military resources.

The other is what relation should be expected to exist between an organization’s resources and the probabilities associated with the possible outcomes of the contest.

I will give a fictional answer to these questions that is common in the literature. This will facilitate comparison of my argument with other discussions of the subject, and make it easier to focus on the crucial issues. I will assume that (1) each organization’s military resources can be summarized by a single index number and (2) the ratio between the probabilities with which each side will disarm the other is the same as the ratio between their military resources, so that if one side has twice the resources as the other it will be twice as likely to be victorious in the military contest.<sup>9</sup>

In fact, while analysts may agree about which attributes of the contestants will influence their chances of success in such contests, like bettors on horse races or athletic contests they will not necessarily agree on a single index number to characterize those attributes or the probabilities to be assigned to the outcomes. In the real world these probabilities would therefore be personal or subjective probabilities. However, as long as one does not lose sight of the fact that these assumptions are merely useful fictions they can be helpful.

Following these assumptions, if we label the military resources of State  $i$  as  $r_i$  and the probability that one state will disarm another  $p$ , then in a two-state contest

$$\frac{p_i}{1 - p_i} = \frac{r_i}{r_j},$$

and therefore

$$p_i = \frac{r_i}{r_i + r_j}.$$

This means that the probability of victory of each state can be equated with the percentage of total military resources that it controls, and since only the relative quantities of resources are important we are free to use any convenient set of numbers to represent them.

We must now consider how a war in which each organization tries to disarm the others might be fought. If one attacks another, the third must decide whether to join in or wait, and if it joins in we must consider how that would affect the probabilities associated with the outcomes. A natural assumption is that if two organizations both fight the third, then the third state faces just the sum of the resources of the other two, and therefore the probability that this lone State  $k$  will win will be

$$\frac{r_k}{r_i + r_j + r_k}.$$

The probability that the other two will be victorious will, of course, be the complementary probability, but after

<sup>9</sup>For references to the literature about contests that conform to these assumptions, see Skaperdas 1998.

they defeat the third state they will still have to fight each other. The probability that State  $i$  will eventually disarm the others if it begins as State  $j$ 's ally is therefore the probability that States  $i$  and  $j$  will win the first stage of the contest times the probability that State  $i$  will defeat State  $j$  in the second stage, or

$$\frac{r_i}{r_i + r_j} \left( \frac{r_i + r_j}{r_i + r_j + r_k} \right),$$

which reduces to

$$\frac{r_i}{r_i + r_j + r_k}.$$

Thus with these assumptions each organization faces the same probability of defeating the other two whether it fights alone or fights with an ally in the first round of the contest.

Each would therefore be better off sitting out the first round and then challenging the winner, since no matter what the distribution of military resources, the probability with which any state will win a contest against either of the other two will be greater than the probability with which it would win a contest against the other two combined.<sup>10</sup> But this implies that a state would be more likely to win if it fights the other two together than if it fights them one after the other, and therefore a state that initiates a conflict should attack both the other states rather than just one. Thus, paradoxically, states would fight together in such a contest not because doing so improves their chances of success, but because if they were allowed to fight separately the attacker's probability of success would be reduced.

A war of all against all in a world of three evenly matched states is thus not a contest that any state can be very optimistic about winning, and when one considers the costs that would be associated with fighting such a contest it appears even less attractive. But what is the alternative?

The answer to this question depends in part on what the expected benefit would be from winning such a contest. Since controversies about these issues date from the beginnings of the European state system, I will begin by assuming that the organizations in question are groups of what William McNeill has called "macroparasites," that is, "men who, by specializing in violence, are able to secure a living without themselves producing the food and other commodities they consume" (McNeill 1982, *vii*),

<sup>10</sup>If there are economies of scale from alliances then this might not be true. However, these economies might have to be large to make a difference. If resources are distributed equally, for example, then in a three-way contest each faces a probability of success of 1/3, but in a two-way contest the probability of winning would be 1/2. Thus an alliance's probability of winning would have to be more than 1.5 times greater to overcome this difference. The effects of economies and diseconomies of scale are discussed further in the appendix.

and the prize that they might fight over is territory populated by compliant food-producing peasants. Thus one organization of warriors can increase its consumption possibilities by defeating competing organizations of warriors, thereby gaining exclusive control over the good things of life.

But this implies that the prize they might fight for is divisible, and therefore unless the leaders of these organizations are risk acceptant there should be some way of dividing it among the competing bands of warriors that all would prefer to fighting a risky and costly contest for exclusive possession of it (Fearon 1995). However, there will likely be more than one such division, and they would have conflicting preferences as to which is to be chosen. Thus they must bargain over which division to accept, and the war of all against all will be fought only if they are unable to agree.

In the two-state model referred to earlier, Powell assumes that even if one state or the other prefers the expected value of a contest in disarmament to the status quo distribution, a satisfied state can always appease it by making a take-it-or-leave-it offer of a concession that leaves the dissatisfied state just indifferent between war and accepting the concession (Powell 1996; 1999, chapter 3). Thus with complete information war never occurs in a two-state world. As already mentioned, it is not clear why a satisfied state or states could not prevent war in a three-state world by doing the same thing.

However, take-it-or-leave-it offers are normally not possible in the context of war, since negotiated settlements can be accepted after a war has begun. Wagner 2000 shows how a contest in disarmament between two states can be modeled as a Rubinstein bargaining game with a risk of breakdown: offers and counter-offers can be made while fighting, but uncertainty about how long the contest will last means that rejecting an offer always exposes a state to some chance of defeat before its counter-offer can be accepted. Let us consider how such a model could be extended to the three-way contest described above.

We have seen that the contest ends when only one state remains undefeated, and this may require two rounds of fighting: in the first round two states will fight the third, and if the third state loses then the two winners will fight each other. Thus the second stage of the contest is just a two-actor contest in disarmament such as the one modeled in Wagner 2000. With complete information the two victorious states will therefore agree to a division of the territory without fighting. The only uncertainty about the outcome concerns which state will have the option of making the first offer, which will be determined by which state is dissatisfied with the distribution that emerges from the defeat of the third state in round one (Wagner 2000, 475). Since this will be determined by the way the first round is fought and how it ends, I will assume that the two possi-

bilities are considered to be equally likely. With this assumption the value of the second stage of the conflict will be commonly known, and will be higher for both allies than the expected value of a two-actor war.

With this expected outcome of the second stage of the contest in mind, let us consider the conduct of bargaining while fighting during the first stage. As in Wagner 2000 I will assume that rejection of an offer leads to a delay, during which there is some probability  $q$  that the military contest will continue and some probability  $1 - q$  that it will end with the disarmament of one side or the other. Thus a state that rejects an offer and demands more could at best expect to get its demand with some probability  $q$ , and with some probability  $1 - q$  will get the “breakdown” outcome instead. In the case of the state fighting alone, this breakdown outcome will be its expected value for the military contest, that is, it will be victorious with a probability equal to  $r_k / (r_i + r_j + r_k)$  and be disarmed with the complementary probability. The two states fighting together, on the other hand, will be disarmed with a probability equal to  $r_k / (r_i + r_j + r_k)$ , and will receive their expected values for the two-actor bargaining game with the complementary probability. With risk aversion this will be better for both than the expected value of fighting the second stage of the contest, and thus there is a bargaining advantage from forming an alliance even if there is no economy of scale from fighting together.

Suppose, then, that bargaining takes place as follows: the leader of one state proposes a division of territory to the other two. Each in turn can accept the offer or propose another. If both accept then the conflict ends and the division is implemented. If a leader whose turn it is to respond proposes another division then the contest continues, and if no one has been defeated by the next period the other two respond to that proposal. The contest continues in this way until one side has been disarmed or all the participants accept a division of the territory. With stationary strategies there will then be a unique subgame perfect equilibrium set of offers similar to the ones that characterize the two-actor bargaining game.<sup>11</sup>

As in the two-actor case, with complete information agreement on a division of the territory should be immediate and therefore the military contest will not occur. Private information about military capabilities, however, can lead to inconsistent expectations about the outcome of such a contest or the costs associated with it, and thus provide an incentive for states to engage in limited mili-

tary contests that reveal such information. Thus war may occur, but it is unlikely to be the war of all against all discussed above (Wagner 2000).

There is one striking difference between this situation and the two-actor case, however, which is that in the three-actor case a war of all against all is the disagreement outcome in any bargaining that may occur even if the only wars that occur are bilateral wars. This is because a war between State  $i$  and State  $j$  that reveals information about State  $j$ 's military capabilities has implications for the terms of a negotiated settlement involving a possible war among all three states. Thus the outcome of a war between States  $i$  and  $j$  could lead to a revision of the territory held by State  $k$  even though State  $k$  did not participate in the conflict. In this situation everything concerns everybody, whether they all participate in a military conflict or not.

Let us consider what this analysis implies about the two main concerns of balance of power theory, the relation between the distribution of power on the one hand and both the likelihood of war and the ability of states to preserve their independence on the other. It should be clear that the relation between the distribution of power and the likelihood of war is the same as in a two-state world, and is therefore very weak. The distribution of military capabilities is relevant only insofar as it influences the vulnerability of a distribution of territory to renegotiation, or the likelihood that leaders will have private information about military capabilities. Such effects are possible but not necessary (Wagner 2000, 479).

There is a bargaining advantage from an alliance, and there may be economies of scale associated with one as well. But even with those advantages, given some distribution of power and territory there may be either one or two dissatisfied states. If there are two they may jointly demand a concession from the third, but if there is just one it may demand a concession from the other two. And any war that occurs would only be a means of revealing information about the distribution of military capabilities among all three states. It is possible that two states may want to fight together against the third to reveal information about their capabilities, but they need not.

There are two ways in which states might lose their independence in the situation modeled above: they might be disarmed in a military contest or they might agree to give up their independence in a negotiated settlement. But these are in reality not two ways but one, since disarming a state only weakens its bargaining power but does not determine what will happen to it. (If this were not true, then Japan, Iraq, and a variety of other independent countries would now be parts of the United States.) Whether any particular distribution of military capabilities between two states leads to a loss of independence for one of them thus depends on both the preferences of their leaders and

<sup>11</sup>Stationary strategies are not required for the equilibrium to be unique in the two-actor game. With nonstationary strategies it is possible to support any arbitrary distribution in the three-actor game, since a player can be rewarded for rejecting a deviant offer by giving him all the gains from bargaining in the following period. Thus any convention about how goods should be divided can be supported by this punishment strategy, but it is not clear in this context where such a convention might come from (Osborne and Rubinstein 1990, 63–65).

their bargaining power, which is itself affected by more than just their relative military capabilities.

If giving up their political independence is very costly for the leaders of states then the more equal their military capabilities the less likely it is that anyone will have to agree to do it. Thus there will be a correlation between equality of power and system stability, but system stability will not require “balancing.”

However, in the world modeled above the organizations competing with each other are warriors trying to maximize their ability to profit from the labor of others. If it were more efficient to merge with another band of warriors it might be possible for all to be better off as a result, and therefore any conflict between them would only be about the terms on which they would merge. Thus all three organizations might disappear even though they were all militarily equal, and therefore neither the distribution of military capabilities nor alliance behavior need affect system stability in this world.

In order to reach these conclusions it has been necessary to make a number of very specific assumptions. Let us see what effect changing some of them would have. One was that no matter how much territory they already controlled, the leaders of all three organizations would want to acquire more. Suppose that this were not true, and, perhaps because of the increasing costs of control or management, acquiring more than some optimum amount of territory would reduce rather than increase the utility of the leader of one of the organizations. This would imply that the other organizations would not lose any territory if they were disarmed by one that had reached its optimal size, which would reduce the risk to them entailed by the war of all against all and therefore increase their bargaining power. Thus satiation might diminish the ability of a state to hold onto the territory it possessed—its adversaries could assume that “what’s mine is mine and what’s yours is negotiable.”<sup>12</sup>

I also assumed that a state that was attacked would try to disarm the attacker rather than merely try to prevent the attacker from disarming it. If it is feasible to do the latter then one might think that a satiated state would be satisfied with doing so. However, this would reduce the risk to the attacker even further and therefore further increase its bargaining power. This is an example of a more general point: when war is part of a bargaining process, the selection of a strategy requires consideration of its effect on the adversary’s well-being as well as one’s own.

Another assumption was that the object in dispute was divisible territory that was valued only because it provided

<sup>12</sup>Note well the distinction between being satiated and being satisfied. A satisfied state is one that prefers its current allocation of territory to the expected consequences of trying to increase it by the use of force; it might become dissatisfied if the distribution of military capabilities changes in its favor. A satiated state is one that would decline more territory if it were given to it.

private goods for consumption. This assumption has two consequences: it implies that everyone is in conflict with everyone else, even if they might ally temporarily, but that compromises can be achieved because the object of the conflict is divisible. It is possible, however, that a conflict among three states might consist of three separate and unrelated bilateral conflicts, so that no state cared how the issue between the other two was resolved. If there were conflicts between every pair of states this would not affect the importance of alliances. If, however, there were two states that each had a dispute with a third but no dispute with each other, then there would be a clear gain to both from allying with each other against the third state.

Territorial disputes facilitate compromise not only because territory is divisible, but also because a division of territory that is preferred by all to the expected value of a military contest for it will be self-enforcing as long as the expected value of the military contest remains the same. But if the object in dispute is not territory, or if territory is valued for some reason other than the consumption opportunities it provides, then it may not be easily divisible. In the literature on bargaining it is commonly assumed that indivisibility can be overcome by randomization. However, a state may prefer the expected value of a limited military contest to the outcome of a lottery, and therefore agreements that take the form of lotteries over discrete outcomes may be unenforceable. Thus states may fight a limited military conflict before reaching an agreement dividing the territory among them, but the war that occurs will not necessarily be the war of all against all (Wagner 1999).

However, even if the object in dispute is divisible, the fact that a territorial division is enforceable only as long as the expected value of the war of all against all remains the same may imply that if changes in the value of war are expected then no agreement is acceptable in the present. Since an agreement accepted now will be expected to be overturned by a less favorable agreement in the future, a state may prefer a military contest today to the unfavorable agreement that is expected later (Fearon 1995).

Moreover, even if specific changes in the parameters that influence the expected value of a war of all against all are not expected and an agreement is therefore reached, such changes may occur and lead to the use of violence to renegotiate the agreement in the future. Thus in systems of this type one must distinguish between the probability of war given some expectations about the outcome of the war of all against all and the frequency of war. I will return to this point later.

But first it is important to take account of one more reason why agreements may be unenforceable, even if the object of conflict is divisible territory valued because of its effect on the consumption opportunities of rulers. I have implicitly assumed that the distribution of military

capabilities is independent of the distribution of territory. But land occupied by compliant peasants can be a source of military capabilities as well as consumption opportunities for rulers, and therefore the redistribution of land can lead to the redistribution of military capabilities. This, of course, is what the literature on the balance of power has always assumed.<sup>13</sup> We must now examine its implications.

## Redistributing power

In the analysis of the relation between war and bargaining just given, if some distribution of territory among competing groups of warriors is not the distribution that would emerge from the bargaining game associated with a war of all against all then one or two groups could expect a concession from one or both of the others. But if a concession of territory would weaken the ones making it and strengthen the recipients, then the new distribution of power might imply that the new distribution of territory was not an equilibrium either, and thus the state or states making a concession might have to make a further concession.

Of course, even if some territorial concessions had this effect it is not inevitable that they all would, in which case states might simply fight limited wars over strategic territory that would terminate in a negotiated settlement dividing the rest (Wagner 2000, 479–481). But in principle this process could continue until some state or states had no more territory to concede. In a two-state world this would imply that no agreement leading to a redistribution of territory was enforceable, and thus the competing organizations might be left to choose between the status quo and a contest in forcible disarmament. The implications of this possibility in a three-state world are somewhat more complex, however, and since this is what most of the literature on the balance of power seems to assume, it is important to understand what they are.

If each state is confronted with a simple choice between the status quo distribution and the war of all against all and the three states are evenly matched, none will be very optimistic about defeating both the other two, and thus a wide range of territorial distributions will be preferred by all to such a war. However, if two potential aggressors expected that disarming the third state would lead not to a second round of fighting but to an agreement about how to divide the spoils of war between them then the expected value of such a contest would be increased. Thus the possibility of an agreement between two potential aggressors would make a three-state system less stable than it otherwise would be.

<sup>13</sup>This can be confirmed by even a cursory reading of any standard work on this subject, for example, Gulick 1955.

At first glance it might appear that the connection between the spoils of war and power would make such an agreement impossible, but in fact it does not, since the parties to it would not be redistributing territory they already possessed (which would lead to a change in their relative power) but redistributing territory that belonged to the third state (whose power would be irrelevant if it is eliminated). Thus they could divide the territory of the defeated state in such a way that the resulting distribution of territory reflected the distribution of power between them but did not alter it. This, then, is a possible justification for Powell's assumption that three states could not reach a negotiated settlement as an alternative to war, but two states could do so after defeating the third (Powell 1999, chapter 5). Whether such an agreement is feasible, however, depends on whether it could be enforced.

This question is the focus of Wagner 1986 and Niou and Ordeshook 1990. These works assume that the economic assets of a defeated state and its military resources are identical, and that the relationship between  $p_i$ , the probability with which a state  $i$  will win a military contest against some state  $j$ , and the military resources of the two states is

$$p_i = \begin{cases} 1 & \text{if } r_i > r_j \\ 0 & \text{otherwise.} \end{cases}$$

Thus if  $r_i = r_j$  then  $p_i = p_j = 0$ .<sup>14</sup> With these assumptions, two potential aggressors could always agree to divide the military resources of a victim in such a way that after the victim is eliminated the victors' military resources would be equal, and in a three-state world in which no state was more powerful than the other two combined there would always be two states capable of doing that.

However, these works offer reasons to believe that such agreements would not be enforceable. Niou and Ordeshook (1990) point out that a potential victim could salvage some of its assets by voluntarily ceding enough of them to one of the potential aggressors to make its resources equal to the other two states combined, which would make a mutually beneficial division of the victim's remaining resources between the potential aggressors impossible. Wagner (1986), on the other hand, emphasizes that each aggressor would have an incentive to cheat on the agreement by acquiring more than its agreed share of the victim's resources during the conflict, and the victim would have an incentive to facilitate such cheating by resisting one aggressor's attack with greater force than the other's.<sup>15</sup>

<sup>14</sup>This also seems to be Schweller's assumption (Schweller 1998).

<sup>15</sup>This possibility was first suggested by Burns (1957). For an example of an unsuccessful attempt to employ such a strategy by a state about to be defeated, see Kecskemeti's account of the terminal stages of the war against Germany during World War II (Kecskemeti 1958, 132–154).

If the distribution of the spoils of war will affect the postwar distribution of military capabilities between the victors then it is hard to deny that if potential allies cannot reach an agreement about what the postwar distribution of power will be they may be unable to cooperate, or that the enemy has both an incentive and an opportunity to disrupt such agreements by facilitating cheating. The conduct of World War II alone provides ample illustration of both these facts (Kecskemeti 1958, 119–211).

However, the relation between the distribution of resources and the expected outcome of war assumed in Wagner 1986 and in Niou and Ordeshook 1990 is much too simple. One of its consequences is to exaggerate the confidence with which states could secure the spoils of victory by arranging for a specific postwar distribution of power between them. This has the merit of stacking the deck in favor of system instability, which makes it all the more interesting to find that the independence of states might nonetheless be protected by the conflict of interest between aggressors. Nonetheless, as already mentioned, it also makes it impossible to understand why war would have to occur at all, and therefore is too simple to be useful.

Let us therefore assume not that the object of dispute among states and their military capabilities are one and the same, but that a state's military capabilities are affected by the territory that it controls, while the probability with which one side in a military contest will disarm the other is, as before, the percentage of total military resources that it possesses. Thus if  $t$  represents the amount of territory a state controls, then for any state  $i$ ,  $r_i = f_i(t_i)$ , where  $f_i(\cdot)$  is a function that reflects not only the prevailing military technology but also the ability of that state to convert economic assets into military capabilities. Thus it need not be the same for each state, nor need it remain the same over time.

With this assumption the probability of disarming an adversary will never be zero for either victor. As we have seen, redistributing the territory of a potential victim in a way that would be acceptable to both of two potential aggressors is still possible. However, now security of possession of the spoils of victory requires certain knowledge of one's former ally's utility function, something that will normally not be available. Moreover, even with complete information there will be an additional enforcement problem.

Any agreement reached between two victorious aggressors would reflect the distribution of power between them, which would be determined in part by  $f_i$  and  $f_j$ . However, as already noted, these could change, and if as a consequence of such a change one or another state preferred a contest in disarmament to the status quo then the relationship between territory and power would imply that the dissatisfied state could not then be appeased by

a territorial concession. Thus in a time of rapid expected changes in the relation between the distribution of territory and the distribution of power, two states could not be very confident that an agreement dividing up the territory of a potential victim would last very long. And therefore the prospect of such an agreement might not add much to the expected value of attempting to disarm the third state. Moreover, one state could not allow the other to absorb the military resources of the third without joining in, since it would only face a more powerful adversary in the future.

In that case the expected value of a military contest would differ little from the expected value of the war of all against all. Of course, now its expected value will be influenced by states' expectations of how the outcome of the first round of the conflict would influence the relative power of the combatants in the second round. But if states cannot immediately absorb the resources of a defeated country then, as Schweller and Powell assume, the outcome of the first round will not immediately affect the relative power of the victors no matter how the war is fought, and the expected value of the war of all against all will continue to depend solely on the distribution of power among all three states. And therefore if each is sufficiently pessimistic about the probability of defeating both the other two, the system will be stable with a wide range of territorial distributions. However, "balancing" will not be required to protect the independence of states.

But if negotiated settlements between victorious allies are expected to be stable, Powell's analysis shows that weaker states would not necessarily ally against a stronger one (Powell 1999, chapter 5). (For a more extended discussion of this question, see the appendix.) Moreover, if they did and they were successful, they should be expected to eliminate the stronger state. Thus the relation between the distribution of territory and the distribution of power may threaten the independence of states or protect it, but "balancing" cannot be expected to determine the outcome.

Yet writers on the balance of power claim not only that states join together to oppose powerful states, but that they design peace settlements to restore a "balance" when the resulting war is over. Gulick's well-known book, for example, is not just about the formation of a coalition to counter Napoleon's France but also about the attempt to craft a peace settlement that would restore a balance of power after France was defeated, and Gulick claimed that the "...necessity of preserving the components of the system may be taken as a corollary of the balance of power..."<sup>16</sup>

<sup>16</sup>See Gulick 1955, 73. Note that Powell, who focuses on the question of whether states "balance" or "bandwagon" in forming alliances, assumes that if victorious even balancers would eliminate the defeated state and divide its territory between them (Powell 1999, chapter 5). For a survey of the role of balance of power considerations in peace settle-

It might appear that weaker states would behave in this way only if their sole interest were in protecting the territory they already controlled, and therefore they must be satiated.<sup>17</sup> However the eighteenth century was a period that conformed closely to the assumptions I have made, and it was also the period during which the first systematic ideas about the balance of power were formulated. In their survey of interstate conflict during this period, McKay and Scott say:

Rulers and statesmen strove ceaselessly to increase the power, and therefore the wealth, of their state. State power was everywhere measured in terms of territorial extent and population, which in turn determined revenue and the size of the army. . . . Additional territory was everywhere the aim of policy. (McKay and Scott 1983, 211)

If satiation is required for balancing then it is hard to see why the balance of power was thought so important in the eighteenth century.

McKay and Scott say of the balance of power:

In practical terms the balance of power meant simply that no one state, or alignment, should become too powerful; and that if it did, the other European states would join together to reduce its power. (McKay and Scott 1983, 211–212)

But how powerful was too powerful? Many writers have echoed the answer given by Gentz early in the nineteenth century: “. . . if the states system of Europe is to exist and be maintained by common exertions, no one of its members must ever become so powerful as to be able to coerce all the rest put together” (quoted in Gulick 1955, 34). However, if we give this and other statements like it their most obvious interpretation, which is that all states should be satisfied with a situation in which none was more powerful than the other states combined, then “balancing” may be consistent with the elimination of states, since this is a condition that can be satisfied when there are just two states as well as when there are three. In that case all that would protect the independence of states would be the inability of two aggressors to resist the temptation to cheat on an agreement that divided their victim in such a way as to leave them equally powerful.

Thus if weak states are expected to ally against a strong one but preserve its independence if they succeed in disarming it, it must be because states in a system of this sort require more of the distribution of power than Gentz’s criterion seems to imply: they must require that every state be less powerful than the others combined. This requirement can only be met if there are three or more independent states. But that still leaves unclear why states would

ments in the modern state system, see Holsti 1991.

<sup>17</sup>This is what Schweller claims (Schweller 1994, 1998).

aim for a distribution of power rather than a distribution of territory that reflects the distribution of power, or how much less powerful than the others a state must be.

## Balances and balancing

There are three distinctive claims made by writers on the balance of power that are difficult to justify within the framework of assumptions developed above. One is that states have preferences about the distribution of power that are independent of its effect on the distribution of territory. A second is that these preferences lead weak states to ally against strong ones, which some writers call “balancing.” And a third is that states’ preferences about the distribution of power may lead coalitions to decide not to deprive states they have disarmed of their independence, even though that implies that members of the winning coalition must forgo territorial gains they would otherwise value. We must now consider whether there is any reason to believe these claims to be true.

We should first note that, because of the ambiguity of the expression “balance of power” and the vagueness of “balance of power theory,” much of the behavior that is pointed to as an illustration of “balance of power theory” can be explained within the framework developed above, and therefore cannot be pointed to as evidence for the truth of these claims. For example, in discussing military conflict among the northern Italian city states during the Renaissance, Mattingly says:

Historians have been able to discover one general principle in sixteenth-century diplomacy related to the idea of national interest, the principle of the balance of power. There are, indeed, episodes in the period 1494 to 1559 when it looks as if that principle was really being applied, especially when it was a question of the combination of two or more strong states against a weak one. Here the principle requires such a partition of the victim’s territories as not to change decisively the strength of any victor in relation to his partners. . . . But since it really means little more than that the biggest dog gets the meatiest bone, and others help themselves in the order of size, it is hard to be sure that the sixteenth century appreciated the full beauty of a balanced system. (Mattingly 1964, 140–141).

But dividing up a weak state between two strong ones in a way that reflects the relative power of the victors but does not alter it is fully consistent with the framework developed above, and inconsistent with the behavior normally associated with “balancing.”<sup>18</sup>

Confusion about what behavior is and is not consistent with “balancing” has been fostered by Waltz’s influential

<sup>18</sup>See also the discussion of this passage and similar statements by other authors in Powell 1999, 160.

distinction between “internal” and “external” balancing, which seems to imply that they are just two ways of doing the same thing (Waltz 1979, 118). But according to Waltz, internal balancing consists of “moves to increase economic capability, to increase military strength, to develop clever strategies.” Since the distribution of such capabilities among all states will influence the distribution of any goods to be divided, all states can be expected to be interested in strengthening their own capabilities relative to others’. In an environment in which one or two states do not have a natural advantage over all the others the result of such competitive efforts might well be that states are and remain relatively evenly matched, just as one team need not dominate the National Football League forever even if there were no rules whose purpose is to avoid the creation of “dynasties.”

If so, and if the leaders of all states also place a high value on remaining independent, then as pointed out above this will lead to agreements among them that preserve their independence.<sup>19</sup> But this does not imply that states have engaged in “external balancing” if that consists of joining with weak states against stronger ones or forgoing the opportunity to absorb defeated states when it arises. And therefore the fact that, for example, wars in the eighteenth century were limited and typically did not lead to the elimination of any of the major states cannot be cited as evidence that states did so then, since it can easily be explained as a consequence of the fact that the major states were evenly matched and were able to reach negotiated settlements that reflected this fact.<sup>20</sup>

Thus it seems possible that the claims made by writers on the balance of power just summarized are simply the result of confusion. If so, since the confusion has been so pervasive and long-lasting, it is also possible that it has influenced both historians and statesmen to the point that it would be difficult to settle the issue by looking at the historical record alone. Thus it is important to make sure that we do not reject these claims prematurely. I will suggest that if a justification for them is to be found it will be found in the problems associated with enforcing agreements when the distribution of territory affects the distribution of power.

Consider the problem confronted by two equally matched states that have just succeeded in disarming the third. If they divide the territory of the defeated state between them in a way that reflects their relative power then they will both be satisfied with the resulting distribution. The problem is to explain why they would choose to main-

tain the independence of the defeated state and therefore not take advantage of all of its territory.

As already noted, if they divide the territory of the defeated state in a way that reflects the current distribution of power between them then this division may no longer be an equilibrium if a change in  $f_i$  or  $f_j$  leads to a change in the distribution of power, and in an environment in which such changes occur frequently such an agreement may therefore not last long. Moreover, given the relation between territory and power it would not be possible for the state disadvantaged by this change to appease the newly dissatisfied state.

Suppose, however, that they do not redistribute all of the third state’s territory, but leave it with a reduced amount. If all three states agree that no state should be allowed to become more powerful than the two victors have become and one of the victors subsequently becomes more powerful, then neither of the other two will accept an agreement giving it more territory and it may prefer to accept the existing distribution to the expected value of trying to defeat both of them. Moreover, if an increase in power is anticipated then the other two may have an incentive to wage a preventive war against the newly advantaged state. Note that it makes little sense to think that two states would attack a third because the third state was too powerful, as the passage from McKay and Scott quoted above suggests, but two states might attack a third in order to prevent the third from becoming too powerful if it were expected to do so. If they did and were successful then they could divide the territory of the formerly powerful state between them in the same way, maintaining the independence of the victim as a way of securing their own possessions against an uncertain future.

Thus an agreement between two successful aggressors that leaves some of the military capabilities of their victim intact is like depositing some of the military capabilities at their disposal in an escrow account which can be used against either of them, and thus serves as a way of protecting both against the possibility that their agreement might be overturned by a subsequent change in their relative military capabilities. But we have already observed that in a world of three evenly matched states the expectation that two states, if victorious, could reach an agreement about how to divide up the territory of the third state would increase the expected value of an attempt by them to disarm it. Thus if “balancing” provides a means of enforcing an agreement that would otherwise not be enforceable, it would not be inconsistent with “bandwagoning” but would actually make “bandwagoning” possible.<sup>21</sup>

<sup>19</sup>Waltz himself said that “. . . the system won’t work if all states lose interest in preserving themselves. It will, however, continue to work if some states do, while others do not, choose to lose their political identities, say, through amalgamation” (Waltz 1979, 118).

<sup>20</sup>This is the explanation given by Clausewitz (von Clausewitz 1976, 589–590).

<sup>21</sup>Note that if the distribution of the spoils of war does have an immediate effect on the relative power of the victors then the victim of such bandwagoning might still have an incentive to fight the war in such a way that one of the aggressors achieved its maximum permissible size before the other did, thereby salvaging more of its territory by forcing a

The extent to which the expectation of balancing could be used to support the forcible redistribution of territory depends on how powerful each state is willing to allow other states to become, since obviously the more territory that must be left with the third state the less attractive is a military contest to capture the rest. If balancing is the result of a willingness to sacrifice some territory in order to make the possession of the remainder more secure it is like buying insurance, and the amount of insurance rulers will choose to buy will depend on both their attitudes toward risk and the amount of it they believe they are exposed to. But this implies both that no definite answer can be given to the question of how powerful other states should be allowed to become, and that the leaders of different states may give different answers to it.

As noted above, satiation is another reason why victorious states might forgo the opportunity to absorb the territory of states they have defeated. However, the connection between satiation and the balancing behavior described above is not as straightforward as it might seem.

We have seen that satiated states' lack of interest in additional territory reduces the risks run by other states who attack them, and therefore reduces their bargaining power. The connection between territory and military capabilities restores some of that bargaining power, since it implies that appeasement might not work and therefore concessions could not be extorted from a satiated state. Nonetheless, if the satiated state is expected to restore the independence of an aggressor that has been disarmed then it is less dangerous to attack a satiated state than one that is not satiated. One way to compensate for that is to threaten to divide defeated aggressors into smaller states, thereby depriving their rulers of some of their territory without paying the costs associated with absorbing it. Ex post this also can be represented as a form of "balancing," since the relative power of each of the successor states will be less than the power of the original aggressor. But ex ante the expectation that this will be done will increase the ability of a satiated state to deter an attack by a dissatisfied one and therefore also serves as a punishment strategy for deterring aggressors.

However, to punish an aggressor a satiated state must first disarm it and to do that it must fight it. A satiated state will resist forcible disarmament if attacked by two dissatisfied states. But if it is the only satiated state, how should it respond if one of the other two attacks the third? Since neither of the other two is satiated, the satiated state will confront a much more dangerous adversary in the resulting two-state world no matter which side wins. But the only way to avoid this outcome is to join one side or the other and if successful bargain with its ally, and therefore a satiated state might engage in bandwagoning even

---

reversal of alliances before it was disarmed.

if it plans to partition its winnings into independent states in order to avoid the costs of controlling them.

But it is also possible that the dissatisfied state might reach its optimal size without absorbing all the territory of its victim. Perhaps then the existing satiated state could avoid the costs and risks of war by standing aside and allowing the dissatisfied state to expand. If so, then in spite of the fact that concessions would only strengthen the dissatisfied state the third state might prefer to make them instead of fighting, since if the dissatisfied state becomes satiated it will no longer be a threat, and if it does not then the satiated state will be more likely to fight as well.

Of course, satiated states need not remain satiated if the value of territory or the techniques available for controlling it should change, and thus there are risks associated with allowing states to expand until they are satiated just as there are risks associated with allowing them to expand until they are satisfied. The optimal policy for the satiated state therefore depends on its evaluation of the risks associated with allowing each of the other two states to increase in size and therefore power, as well as the expected costs of war in alliance with either one. Since neither the satiation point of the potential aggressor nor the satiated state's willingness to tolerate its expansion is likely to be common knowledge, the likelihood of mistaken expectations is great.

Moreover, the optimal outcome for the satiated state is the continuation of the status quo. Thus it may have an incentive to conceal its own true preferences if it believes that the result will be that each of the other two states will overestimate its willingness to support its opponent. Perhaps this helps explain the failure of Great Britain to make clear what it would do in response to German expansion prior to both World War I and World War II, as well as controversies about what is called "strategic ambiguity" in debates about contemporary US policy toward Taiwan.<sup>22</sup>

If two of the three states are commonly known to be satiated then each would benefit from cooperating with the other to disarm the third, since neither would want to acquire more territory and both would gain by dividing the third state and thus reducing the military capabilities of any single potential adversary. However, each would also need to consider the probability of success in a military contest between the two of them and the third state. If it is sufficiently low and the third state is known to be sufficiently risk averse, each satiated state might prefer instead to fight with the third state and then arrange for a distribution of territory that would be sustained by "balancing." At that point, of course, the losing satiated state would no

---

<sup>22</sup>Prior to the two world wars Britain was concerned about two potentially expansionist states, Germany and Russia (or the Soviet Union), and did not want to encourage either. For a discussion of the controversy about US policy toward Taiwan see Benson and Niou 2000.

longer be satiated.

Thus it would be wrong to say that even satiated states necessarily engage in “balancing,” at least as that term is customarily defined.

This analysis has important implications for the literature on extended deterrence. The problem of extended deterrence is always analyzed in a two-actor framework even though there are at least three states involved: a defender, a potential aggressor, and a third state that the defender is committed to defending. It is commonly assumed that the defender’s goal is to deter an attack on the client state by the potential aggressor by threatening war against it if it attacks. What is in doubt is the willingness of the defender to respond in this way, and the problem of extended deterrence is the problem of how defenders can credibly reveal their willingness to do this when they have an incentive to bluff. Left implicit in this literature is the assumption that the reason for the defender’s interest in preventing an attack by the potential aggressor is the fact that a successful attack would increase the power of the aggressor, and that both defenders who were bluffing and defenders who were not would have an interest in persuading the potential aggressor that an attack would be unacceptable for this reason.

The analysis offered here explains why these assumptions might be correct. But it also shows that there are circumstances in which they would not be true. What is required for extended deterrence to be relevant is that (1) concessions would increase the military capabilities of an aggressor and (2) the potential aggressor is on the verge of becoming “too powerful” (as McKay and Scott put it). But even when concessions cannot be made without affecting relative power, whether states are satiated or not they have an incentive to “balance” only when another state approaches some threshold of tolerance which each state must define for itself. When all states are far from this threshold international politics looks quite different. Moreover, it is not always true that concessions cannot be made without changing the relative power of states. This is why extended deterrence was the central problem of the Cold War, but not of earlier periods of international politics, or the period that has succeeded it.<sup>23</sup>

Recall that McKay and Scott claimed that states were concerned not just that a single state might become “too powerful,” but that an “alignment” might as well. We have seen that in a three-state world an unwillingness to allow another state to become as powerful as the other states combined can be explained as the result of the risks that states are exposed to when the distribution of military capabilities is believed to be unstable. “Balancing” can be explained as a way of controlling those risks. But this

<sup>23</sup>For an argument that it was this difference that Waltz tried to explain by his poorly defined distinction between bipolar and multipolar systems see Wagner 1993.

implies that when there are more than three states they all must also be concerned about the power of potential two-state coalitions, since a two-state coalition could secure its winnings by eliminating all but one of the other states, which would be expected to “balance” between the two winners. And therefore all states must worry that two states, and not just one, might become optimistic enough about their ability to disarm all the others to try it. Thus the logic of “balancing” offered here can easily be extended to coalitions in a world of more than three states.

## Summary and implications

One obvious implication of the analysis offered above is that the issues debated in the literature on “balance of power theory” are far more complex than most writers seem to recognize. It is therefore difficult to tell whether an argument is valid, and easy to focus on examples whose features are not general or even typical. Often writers assume that these issues can be resolved by debating the relative plausibility of different assumptions, whereas the real problem is to determine what the implications of any particular set of assumptions actually are.<sup>24</sup>

It is thus not surprising that scholars interested in evaluating competing arguments about the balance of power have simplified some aspects of the problem in order to focus on the implications of various possible assumptions about other aspects. Writers on the causes of war, who have focused on analyzing the choice between war and a negotiated settlement, have therefore worked within a two-actor framework, while writers on coalitions and system stability have tended to ignore the possibility of negotiated settlements in order to focus on coalition formation and the effect of the number of states in the system. In the analysis offered here I have tried to discover what each might have missed by extending recent work on the relation between bargaining and war to a three-state setting.

When negotiated settlements are possible one must distinguish between the war that would occur if no agreement could be reached and limited wars that, because of incomplete information or enforcement problems, occur because they are expected to lead to an agreement (Wagner 2000). In a two-state world, the alternative to agreement is a war in which each state tries to disarm the other. In a three-state world, it is a war in which each state tries to disarm the other two, which I have called a “war of all against all.” Somewhat surprisingly, there may be no advantage to having an ally in such a contest, and even if there is it might nonetheless be preferable to sit on the sidelines while the other two fight, if it were possible to get away with doing that.

<sup>24</sup>This is the main point made by Powell 1999.

Systematic ideas about the importance of the balance of power began to be developed in Europe during the eighteenth century at a time when the object of dispute among states was territory, which rulers not only fought over but traded freely. In those circumstances negotiated settlements were available as an alternative to fighting the risky and costly war of all against all, and were frequently accepted either before fighting or after it. As in a two-state world, the distribution of the benefits from a negotiated settlement in such circumstances should reflect the distribution of military capabilities among all states. In a three-state world there is also a bargaining advantage from forming an alliance and there may be economies of scale from fighting with an ally, and therefore the distribution of benefits in a negotiated settlement will reflect those facts as well.

However, any war that actually occurs prior to reaching an agreement might be a bilateral war. And just as in a two-state world a war might lead to a concession by a strong state to a weak one, in a three-state world a war that shows that the existing distribution of territory does not reflect the true distribution of power among all three states might lead to concessions by two allied states to an unallied state. Thus “balancing” as commonly defined has no relevance to such a world. But if all states are evenly matched and place a high value on maintaining their independence it is unlikely that they could be compelled to surrender it, and therefore balancing is also unnecessary for system stability.

Since there is no external enforcer of agreements among independent states, the parties to them must also be concerned about whether they will all have an incentive to abide by them. The fact that in the eighteenth century changes in the distribution of territory could change the distribution of military capabilities posed a problem in devising agreements that passed this test. Thus states were constrained to devise agreements that did not themselves alter the distribution of power among them. This explains the principle of “reciprocal compensation,” which according to Gulick required that “aggrandizement by one power entitled other powers to an equal compensation or, negatively, that the relinquishing of a claim by one power must be followed by a comparable abandonment of a claim by another” (Gulick 1955, 70–71).<sup>25</sup>

However, this is a constraint that cannot always be satisfied. In a two-state world this would imply that a negotiated settlement might not be possible, in which case states would be left with a stark choice between the status quo and a costly war to the finish. Contrary to most people’s intuition, the inability to reach a negotiated set-

<sup>25</sup> See the discussion of this principle by Powell (1999, 160). Because Powell ignores the effect of territorial bargains on the distribution of power, he finds that in his model only “something like this” happens, namely, that agreements reflect the existing distribution of power.

tlement in such circumstances might actually make war less likely, since the status quo might be preferred by both states to a costly contest in disarmament, whereas a limited war leading to a negotiated settlement might be seen as profitable by one or the other (Wagner 2000). But in a three-state world this stabilizing factor is diminished by the fact that it is much more likely that an agreement between two states about how to divide up the territory of the third could satisfy this criterion than that a negotiated settlement accepted by all three would do so. If so, then both war and the elimination of states would be made more likely.

But this likelihood might be reduced by the fact that a state could not profit from such an agreement without allowing its ally to become more optimistic about winning a fight to the finish than it had been before the third state was eliminated, and the agreement about how to partition the third state between the two victors would be enforceable only as long as each preferred it to the expected value of trying to disarm the other. Since the distribution of military capabilities changed frequently, the price of capturing the territory of the defeated state would therefore be that all of the territory of the victors would be put at greater risk.

This risk could be reduced, however, if a victorious coalition did not eliminate the third state but merely redistributed some of its territory. If it were common knowledge that no state would cooperate with a state that was “too powerful,” then the former victim would be an added deterrent against either victorious ally if it became more powerful. Thus balancing, as commonly defined, can be explained as a way of reducing the risks associated with expansion. It therefore makes expansion more likely, not less.

However, this “moderation” in the behavior of states (as Gulick called it) could also just be a consequence of the ability of states to reach negotiated settlements when they are all relatively evenly matched. The common failure to distinguish between bargaining and counterforce military contests and the ambiguity of the words “balance” and “power” make it easy to confuse these explanations.<sup>26</sup>

Since the publication of Waltz’s influential book (Waltz 1979), “... international systems have been demarcated by their differing polarities” (Schweller 1998, 39). The polarity of a system refers to the number of Great Powers in it, a definition that fosters confusion between the number of states and the distribution of military capabilities between or among them (Wagner 1993). The analysis

<sup>26</sup> The same confusion is exemplified by commentaries that portray recent efforts by Russia and China to thwart the “hegemony” of the US by acting in concert as examples of modern-day balancing. Such actions are more likely designed to influence the terms of agreements that will be reached by all three states than to reflect the role either Russia or China would play in an all-out war with the United States in the future.

offered here has important implications about the significance of each of those attributes.

As Waltz said, “[s]ystems of two have qualities distinct from systems of three or more,” because when there are more than two states coalitions are possible (Waltz 1979, 163). Waltz claimed that “in all of modern history” there has only been one two-state system, the one that existed during the Cold War. In fact there has been none, and therefore coalitions have always been possible. “Beyond two,” Waltz asked, “what variations of number are consequential?” Reflecting a common view, he claimed that:

Systems of three have distinctive and unfortunate characteristics. Two of the powers can easily gang up on the third, divide the spoils, and drive the system back to bipolarity. (Waltz 1979, 163)

However, no matter how many states there are there will always be coalitions of some that could eliminate one or more of the others. The question that must be asked is whether they would choose to do so, and we have found no reason to believe they would be more likely to do so if there are three states than if there are more than three states.

When the distribution of territory affects the distribution of power, states must be cognizant of the fact that by cooperating in the elimination of states they make not only themselves but also their allies more powerful and therefore expose themselves to an increased risk of attack. There is a difference between three-state systems and systems with more states in this respect, in that in three-state systems states will be concerned only about increasing the power of single states, whereas in systems with more than three states they must also be concerned about increasing the power of potential coalitions. In either case, there will be a difference between distributions of power such that no states believe that any state or combination of states is close to this threshold and distributions where they are close to it.

However, there is no objective way of specifying the difference between these two types of distributions. This follows not only from the fact that in reality there is no objective way of measuring the distribution of military capabilities such that one could determine the probability with which any combination of states could expect to disarm any other combination of states, but also from the fact that a state’s threshold of tolerance for the power of other states depends on its evaluation of the risks involved. Thus the only reliable indicator of when some state or states have crossed this threshold is the behavior of other states.<sup>27</sup> And therefore there is no meaningful way by which international systems can be categorized by their “polarity.”

<sup>27</sup>If this were not true the problem of extended deterrence would not exist.

Debates about the effect of different distributions of power, alliance configurations, or numbers of states on the probability of war usually overlook the question of why any war that occurs would not be decisive. If it is it would be the war to end all wars, after which the probability of war would be zero. Statesmen should be interested in securing their gains from war, and therefore we should expect them to aim for outcomes that would reduce the probability of war thereafter.

We have seen that the behavior of eighteenth century statesmen summarized by Gulick (1955) might be explained by the expectation that wars would likely not be decisive, and therefore statesmen had to purchase insurance against an uncertain future. The reason wars were not expected to be decisive was that no distribution of military capabilities was expected to last very long. And one reason no distribution was expected to last very long was that everyone expected that they would all try to change it, and their efforts would meet with some success.

The result was not only a recurring series of military contests, but also profound changes in the nature of the contestants and their objectives—changes that were largely the result of the struggle for advantage among them (Tilly 1990, Porter 1994). And therefore the members of the modern state system are now quite different from the ones that formed the context within which theories about the balance of power were originally constructed. Among a multitude of differences are the facts that the rulers of modern states do not seek territory as a means of providing incomes for members of their extended families or revenue for their coffers, and the bargains they have made to acquire more revenues from the territories they rule make it very difficult to concede some of that territory in response to threats from other states.

Yet modern theories of international politics retain many of the ideas that were originally developed to understand interstate relations in the eighteenth century. Some scholars claim that many of these ideas are not relevant to modern conditions, and some also claim that there is a direction to these changes so that these ideas will be increasingly less relevant. I hope the analysis offered here provides some of the intellectual tools needed to evaluate the former claim. Evaluation of the latter will require a different set of tools.<sup>28</sup>

<sup>28</sup>Already in the eighteenth century Immanuel Kant claimed that conflict was a mechanism that would produce a “lawful order in society,” which would eventually encompass the relations among states as well as the governance of men within them (Kant 1949, 120). Waltz, on the other hand, claimed that conflict among states selected for realpolitik (Waltz 1979, 127–138). These claims raise questions about the dynamics of “balance of power systems,” as they are sometimes called, that cannot be answered by comparative statics.

## APPENDIX

### Balancing vs. bandwagoning

Recent controversies about whether states should be expected to “balance” or “bandwagon” have their origin in Kenneth Waltz’s book, *Theory of International Politics* (Waltz 1979), which also popularized this terminology. Waltz claimed that:

If states wished to maximize power, they would join the stronger [of two coalitions] . . . , and we would see not balances forming but a world hegemony forged. This does not happen because balancing, not bandwagoning, is the behavior induced by the system. . . . Secondary states. . . flock to the weaker side; for it is the stronger side that threatens them. (Waltz 1979, 126–127)

As Powell has shown at length, this is a non sequitur (Powell 1999, chapter 5). A state forced to choose between a stronger and a weaker ally confronts a complex tradeoff: if it joins the stronger side it will confront a more powerful adversary after victory, but if it joins the weaker side victory will be less likely. Without more information one cannot say which it will choose.

In the war of all against all discussed in the text, these two factors exactly cancel each other out, and therefore states should be indifferent between the two possibilities. However, additional factors can tip the balance one way or the other. If, for example, powerful allies can be expected to bear a larger proportion of the costs of war than weaker ones, then a state would prefer a more powerful ally.<sup>29</sup>

On the other hand, economies of scale in alliances would be a factor working in the opposite direction. Using Powell’s notation, let  $g$  be a parameter that describes the effect of economies of scale in alliances. Then the expected value to State  $i$  of a military contest fought in alliance with State  $j$  will be

$$\frac{r_i}{r_i + r_j} \left[ \frac{g(r_i + r_j)}{g(r_i + r_j) + r_k} \right],$$

which reduces to

$$\frac{gr_i}{g(r_i + r_j) + r_k}.$$

If  $g > 1$  and  $r_j > r_k$ , it is obvious that the value of this expression would be increased if State  $i$  allied with State  $k$  instead.<sup>30</sup>

However, coalition warfare may be inefficient. If so, a weak state would prefer to fight alone.<sup>31</sup> But it would be

<sup>29</sup>This is one of Powell’s assumptions (Powell 1999, 162).

<sup>30</sup>On this point see also Skaperdas 1998.

<sup>31</sup>For a possible example, see the statements of British policymakers about defending France in the period before World War II quoted in Schweller 1998, 150.

even better off sitting out the first round of the contest, and therefore two weak states might end up fighting together not because they prefer to do so, but because they are both attacked by an optimistic strong state.

If two allies expect to reach an agreement in lieu of fighting each other after defeating the third state then the problem becomes more complex. The expected value of a military contest between them will then be the disagreement outcome in the bargaining that takes place, but the actual distribution will be determined by the bargaining process.

Powell assumes that a weaker ally can appease its stronger partner by making a take-it-or-leave-it offer of a compromise settlement (Powell 1999, 156–167). This has the effect of reducing the bargaining power of the stronger ally. To see what the effect of a more equal bargaining outcome might be, assume that all the territory will be divided between the two victorious allies in the same proportion as their relative military capabilities. If we ignore the costs of war, then if the two states are neutral in their attitudes toward risk they would be indifferent between such a division and fighting, and therefore, in the absence of economies of scale in alliances, indifferent between allying with a stronger or a weaker state. With risk aversion,  $U(r_i/(r_i + r_j)) > r_i/(r_i + r_j)$ , and therefore both states would strictly prefer the division. But since  $U(x) - x$  is increasing for smaller values of  $x$  and decreasing for larger ones, a state might prefer a larger probability of a smaller reward to a smaller probability of a larger one or the reverse, depending on the relative sizes of the two potential allies and the shape of  $U(\cdot)$ .

Thus there are many possible combinations of factors which might in any given situation lead a state to prefer balancing to bandwagoning, to have the opposite preference, or to be indifferent between them. And therefore, contrary to Waltz, no general statement can be made as to what states will do.

## REFERENCES

- BENSON, B. V., and NIOU, E. M. S. (2000) “Comprehending Strategic Ambiguity: US Policy Toward the Taiwan Strait Security Issue.” Unpublished paper, Department of Political Science, Duke University.
- BURNS, A. L. (1957) “From Balance to Deterrence: A Theoretical Analysis.” *World Politics* 9:494–529.
- von CLAUSEWITZ, C. (1976) *On War*. (Originally published in 1832.) Edited and translated by Michael Howard and Peter Paret. Princeton: Princeton University Press.
- CLAUDE, I. L., JR. (1962) *Power and International Relations*. New York: Random House.

- FEARON, J. D. (1995) "Rationalist Explanations for War." *International Organization* 49:379–414.
- GULICK, E. V. (1955) *Europe's Classical Balance of Power*. New York: W. W. Norton Company, Inc.
- HOLSTI, K. J. (1991) *Peace and war: armed conflicts and international order 1648–1989*. Cambridge: Cambridge University Press.
- HUI, V. T. (1999) "Rethinking War, State Formation, and System Formation: Competing Logics in the Historical Contexts of Ancient China and Early Modern Europe." Paper presented at the Annual Meeting of the American Political Science Association, Atlanta, Georgia, September 2–5, 1999.
- JERVIS, R. (1978) "Cooperation Under the Security Dilemma." *World Politics* 30:167–214.
- KANT, I. (1949) *Idea for a Universal History with Cosmopolitan Intent*. Originally published in 1784. Reproduced in *The Philosophy of Kant: Immanuel Kant's Moral and Political Writings*, edited and translated by Carl J. Friedrich. New York: The Modern Library.
- KAPSTEIN, E. B., and MASTANDUNO, M. eds. (1999) *Unipolar Politics: Realism and State Strategies After the Cold War*. New York: Columbia University Press.
- KECSKEMETI, P. (1958) *Strategic Surrender: The Politics of Victory and Defeat*. Stanford: Stanford University Press.
- KNUTSEN, T. L. (1997) *A history of International Relations theory*. Manchester: Manchester University Press.
- MATTINGLY, G. (1964) *Renaissance Diplomacy*. Baltimore: Penguin Books.
- MCKAY, D., and SCOTT, H. M. (1983) *The Rise of the Great Powers 1648–1815*. London and New York: Longman.
- MCNEILL, W. H. (1982) *The Pursuit of Power: Technology, Armed Force, and Society*. Chicago: The University of Chicago Press.
- NIOU, E. M. S., and ORDESHOOK, P. C. (1990) "Stability in Anarchic International Systems." *American Political Science Review* 84:1207–1234.
- OSBORNE, M. J., and RUBINSTEIN, A. (1990) *Bargaining and Markets*. San Diego, CA, Academic Press.
- PORTER, B. D. (1994) *War and the Rise of the State: The Military Foundations of Modern Politics*. New York: The Free Press.
- POWELL, R. (1996) "Stability and the Distribution of Power." *World Politics* 48:239–267.
- \_\_\_\_\_. (1999) *In the Shadow of Power: States and Strategies in International Politics*. Princeton: Princeton University Press.
- SCHWELLER, R. L. (1994) "Bandwagoning for Profit: Bringing the Revisionist State Back In." *International Security* 19:72–107.
- \_\_\_\_\_. (1998) *Deadly Imbalances: Tripolarity and Hitler's Strategy of World Conquest*. New York: Columbia University Press.
- SHEEHAN, M. (1996) *The Balance of Power: History and Theory*. London and New York: Routledge.
- SKAPERDAS, S. (1998) "On the formation of alliances in conflict and contests." *Public Choice* 96:25–42.
- SNYDER, G. H. (1997) *Alliance Politics*. Ithaca, NY: Cornell University Press.
- TILLY, C. (1990) *Coercion, Capital, and European States, AD 990–1992*. Cambridge, MA: Blackwell.
- WAGNER, R. H. (1986) "The Theory of Games and the Balance of Power." *World Politics* 38:546–576.
- \_\_\_\_\_. (1993) "What was bipolarity?" *International Organization* 47:77–106.
- \_\_\_\_\_. (1999) "Bargaining and Conflict Management." Unpublished paper, The University of Texas at Austin. (An earlier version was presented at the annual meetings of the International Studies Association, Washington, D.C., February, 1999, with the title "Bargaining and Conflict Resolution.")
- \_\_\_\_\_. (2000) "Bargaining and War." *American Journal of Political Science* 44:469–484.
- WALT, S. M. (1987) *The Origins of Alliances*. Ithaca, NY: Cornell University Press.
- WALTZ, K. N. (1979) *Theory of International Politics*. Reading, Mass.: Addison-Wesley Publishing Co.