

U.S. Foreign Policy: Explanations for War – Credible Commitment

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The model we have been discussing is static in the sense that the interaction between the two actors occurs once and for all. Although useful in highlighting some features (like the ones we discussed), the model might obscure others. Relations among groups happen continuously and there are many occasions for conflict, sometimes even over the same issue. We shall now extend our model in a very simple way: the actors will engage in conflict bargaining twice. If they fight on either occasion, the war settles the conflict for good: to the victor go the spoils forever (so, again, we are dealing with absolute war). If they do not fight, they enjoy whatever shares of the benefit they agreed to. Their overall payoff is simply the sum of the payoffs from each negotiated deal.

To introduce some dynamics into the model, let us assume that A is declining in relative power: if war occurs today, A 's probability of winning is p_H but if war occurs in the future, A 's probability of winning drops down to p_L , as shown in Figure 1. The whole point now is that the present cannot be treated in isolation: what happens today will have implications for the future. In that sense, the problem today is not one of merely locating a deal in the bargaining range that would result if today is considered in isolation. The problem today is to take into account both the immediate payoff and the future consequences of the choice.

1 How Large Power Shifts Can Lead to War

What should we expect to happen now? When deciding on a strategy today, the actors will naturally look at its possible consequences for the interaction tomorrow. This means that we should begin by analyzing what the future holds in store for them. If war occurs now, whoever emerges victorious will enjoy the entire benefit tomorrow. That's the easy case. If, on the other hand, the actors do negotiate some peaceful agreement today, then they get to engage in another round of negotiations tomorrow. Since A will decline after peace today, the future settlement would have to be contained in the bargaining range when A is weak. Regardless of the terms A agrees to today, he can expect no more than $p_L + c_B$ tomorrow. This is because we already know that under the new distribution of power, B cannot be induced to make a larger concession. This, then, is the *maximum future benefit that B can credibly commit to*. Observe in particular that the actors do not expect war tomorrow. What they do expect is a different peace; one that would involve terms that are worse for A . The question now is: Can the actors avoid war today?

Consider the declining group's war payoff if he fights now. With probability p_H A will win the war and enjoy the full benefit twice while suffering the costs of war: $W_A = 2p_H -$

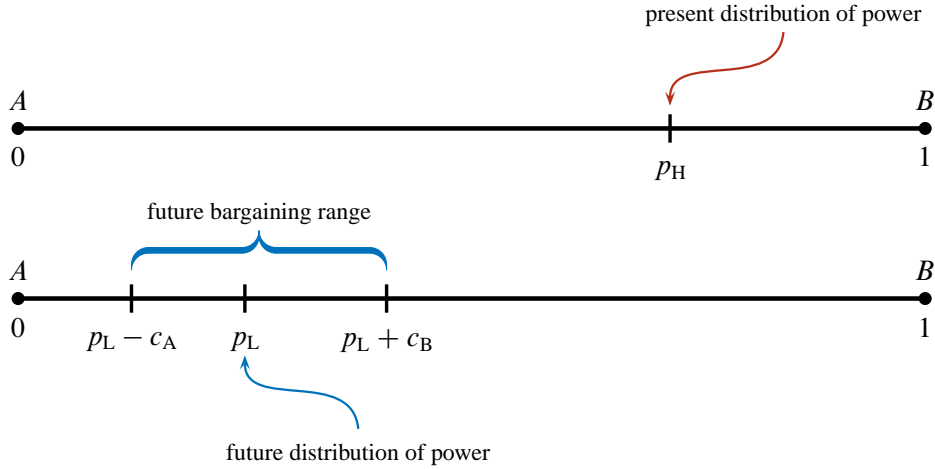


Figure 1: Credible Commitment and War.

c_A . This represents the *minimal* terms that A would have to be offered to forego war today. What can B offer?

As we have seen, the largest concession that B can credibly offer tomorrow is $p_L + c_B$. Actor A would not believe any promise of a larger concession because he knows that B would have no incentive to fulfill such a promise. After all, once tomorrow comes, the incentives B will have are going to depend on the actual distribution of power that obtains, not on the past promises she might have made. After the power shifts in her favor, B's incentives are clear: she is better off fighting than agreeing to a share that gives her less than the expected payoff from war under the new distribution of power.

Turning now to A, we know that he will be induced to eschew war today only if the benefit of peace is at least as good as fighting. The *most* B can offer today is the *entire benefit*, or 1. (We shall ignore whether B actually wants to make such an extravagant offer because, as we shall see shortly, this is going to be a moot point if even this offer fails to satisfy A.) With B offering the entire benefit today and no more than what she can credibly commit to tomorrow, $p_L + c_B$, A's payoff from remaining at peace is $1 + p_L + c_B$. If this is worse than fighting now, then nothing can prevent A from waging war today. Thus, we have a *sufficient* condition that makes war unavoidable in this context:

$$W_A > 1 + p_L + c_B. \quad (1)$$

When condition (1) is satisfied, there will exist no feasible concession that B can physically make that would be enough to get A not to fight today. In other words, if it is the case that $2p_H - p_L - (c_A + c_B) > 1$, then there is *nothing* the B can credibly offer that would satisfy A's minimal demands today. A wages **preventive war** in order to avoid the unpleasant consequences of a decline in relative power.

It is important to realize that this mechanism has an important nuance often not appreciated in discussions of preventive war: the declining actor fights today not because he is afraid of fighting after the power shifts in favor of his adversary, but because he is afraid of the unattractive peace he will have to live with after that happens. Because of this, arguments about the likelihood that the opponent will, in fact, fight tomorrow are beside the

point. One cannot argue against this type of preventive war by asserting that the shift is irrelevant since B will not fight after it occurs. As we have seen, whether B fights or not depends on the terms A is willing to offer. What we have seen, however, is that the maximal concession B can make tomorrow is just not going to be good enough for A from today's vantage point even though it would be if peace prevails and that tomorrow comes.

To understand the condition that leads to the breakdown of peace today better, we can substitute for W_A and rearrange the terms in (1) as follows:

$$\underbrace{\underbrace{p_H}_{\text{chance of victory while strong}} + \underbrace{(p_H - p_L)}_{\text{net gain from fighting while strong}}}_{\text{total benefit from fighting while strong}} > \underbrace{\underbrace{1}_{\text{entire benefit today}} + \underbrace{(c_A + c_B)}_{\text{entire surplus tomorrow}}}_{\text{largest total benefit from peace}} . \quad (\text{CCP})$$

This simply states that if the total benefit from war exceeds the total benefit that A can credibly expect from peace, then war must occur. The one term that might need an explanation is $c_A + c_B$. Recall that for any given distribution of power p , the bargaining range is always defined as $[p - c_A, p + c_B]$. The size of that range is simply $p + c_B - (p - c_A) = c_B + c_A$. We call this the **bargaining surplus** because it is the size of the benefit that the actors can collectively save from destruction by choosing not to fight; it is the peace “surplus” over the total collective benefit from war. By remaining at peace, the actors will collectively save their combined costs of fighting, which is exactly what the term represents. The largest concession one actor can make to the opponent is to offer the opponent his minimal terms plus the entire surplus: doing so would leave the conceding actor with a share equivalent to her minimal terms. This is why B 's giving the entire future surplus to A is the best credible promise she can make.

The most important feature of condition (CCP) is the *size of the power shift*, $p_H - p_L$: the difference between the distribution of power today and the one that will obtain tomorrow after the power shifts in favor of B . If the change is small, then the condition will not be satisfied, and war will not occur. To see this in the clearest case, suppose that power did not shift at all, so $p_H - p_L = 0$. Obviously, the condition for war cannot be satisfied because it reduces to $p_H > 1 + (c_A + c_B)$ but we know that $p_H < 1$. This is why the more precise definition of this mechanism is that **large shifts in power** can cause war, and (CCP) specifies exactly how large the shift has to be for that to happen.

This now tells us that if the actors were to behave *as if* the shift had not occurred, then war would be avoidable. To see what I mean, suppose that B promises to ignore the power shift in her negotiations tomorrow; that is, she commits to bargaining with A as if the distribution of power is still p_H instead of p_L . With this commitment, the size of the power shift goes to zero, and (CCP) fails; war today is avoided. Making such a commitment is certainly in B 's interest today because it enables her to avoid a very unattractive war. The problem is that she cannot credibly commit to making good on such a promise — the incentives she will have tomorrow are such that she will not want to abide by any such promise, not matter how much she wishes she could do so today. The issue is not that B might be lying — she quite sincerely *wants* to make such a commitment — the issue is that she will not have the incentive to follow through, and both actors know it. This is why the mechanism that explains war as caused by large power shifts is often called the **credible commitment problem** explanation. This is why we use that acronym for condition (CCP).

2 Why Actors Cannot Commit: Anarchy

Why is it that groups cannot generally be trusted to abide by their promises in the sense that the only credible promise (or threat) is assumed to be the one that the actor would be willing to follow through on *given his incentives at the time he must act on it*. Why it is so often that promises in international relations do not seem to be worth the paper they are written on? One possible answer is that because there often does not exist an overarching authority that can enforce such implicit or explicit contracts. This is why many scholars argue that international relations occur in a context of **anarchy**. This does not mean chaos. It means that the international environment does not have an entity to force actors to fulfill their promises (or threats) when it is not in their interest to do so. There is no world government to provide enforcement analogous to what we have at the domestic level where the police enforces the rulings of courts. In these case, the only enforcement must be provided by the actors themselves. When the incentive to fulfill the terms of one's promise exist, then it will be in the actor's interest to follow through, providing the **endogenous enforcement** of the terms, and rendering the promise credible.

There are some ways of making some promises stick. For instance, one group can "force" the other to cooperate by threatening to withhold cooperation in the future — this can work when both actors do care about their future interactions and so the weight of the cooperative behavior that would be foregone by the failure to cooperate today can exceed any temporary gain from exploiting the other. This sort of self-enforcement will be much less useful, however, when it comes to the types of issues where the use of military force, and with it the hope for a permanent settlement, becomes a possibility. In these contexts, the only way for one actor to make another abide by his promises is by threatening to fight if he fails to do so. In the context of anarchy, the use of force is always an option in disputes because nobody has a monopoly on the legitimate use of force the way a government (usually) does. But this is precisely the problem we have explored so far: our model assumes that the only thing actors can guarantee themselves is what they expect to secure by the force of arms.

It might be interesting to compare briefly the credible commitment problem with the mutual optimism explanation. The obvious difference is that the commitment problem arises when actors are fully informed about the state of the world, and thus, strictly speaking, uncertainty is not a necessary cause of war. A more subtle difference is that under mutual optimism, actors fight because they hope that their opponent is weaker than the opponent seems to believe. Fighting corrects the mistaken expectations as groups learn from the developments on the battlefield, and once they become sufficiently convinced that the opponent is strong, they make peace. In contrast, the commitment problem arises when the declining actor fears that its opponent will become very strong: if the power shift is small, then a bargain can still be struck. This suggests that uncertainty about the size of the power shift might promote peace because an actor who faces the prospect of either a serious (war-inducing) decline or a mild (war-avoiding) one might well take its chances with peace provided it places enough weight on the latter possibility. Thus, the more optimistic the declining actor is, the less likely is war to occur. This highlights an interesting tension between the two explanations. Under mutual optimism, war occurs because both sides have unreasonably high expectations about what war holds in store for them. Under the commitment problem, war occurs because one actor is very pessimistic about its military prospects

in the future.

3 The Role of Fighting

You might have noticed that this mechanism also models war as *absolute*: once it begins, it is fought to the end without any possibility to re-negotiate terms. We can modify the model to accommodate the notion of *ideal* war as follows. Suppose that when actors negotiate and choose whether to fight, fighting does not result in an *absolute* war but in a military engagement that might end in stalemate. If that stalemate occurs, they get to negotiate and choose whether to fight again. If they choose not to fight, they enjoy the peaceful distribution of the benefit for one encounter, which also allows them to consolidate whatever gains they have made. The actors can then renegotiate the terms in their next encounter or fight another battle. To introduce a commitment problem, suppose that peaceful consolidation permanently shifts power in favor of one of the actors but that it takes some time to achieve. This means that when actors decide whether to allow peace to happen, one of them has to worry that the opponent would use the peace to gain a military advantage, which will then be used to extract more concessions. The process continues indefinitely: bargaining can be interrupted by occasional bouts of fighting.¹

Fighting a battle has two effects: (a) it gives both actors an opportunity to reach a decisive military victory and enjoy the benefit unmolested; (b) it slows the pace of consolidation, which means it affects the rate with which power shifts. When power shifts more slowly, actors have opportunities to accommodate the changes in the expected benefits from fighting without resorting to force. The logic can be illustrated by referring to our original model of credible commitment. Recall that $p_H - p_L$, the size of the power shift, was the key component of the mechanism that led to bargaining breakdown. Suppose now that instead of occurring all at once, it happened more slowly and actors could negotiate after each change. For example, suppose they while the power shifts they have $n > 1$ opportunities to bargain and these are equally distributed in time. The rate of the power shift is then simply the amount with which the distribution power changes with each bargaining encounter: $\Delta = (p_H - p_L)/n$. Since $n > 1$, the amount power shifts after each encounter is smaller than the completed power shift, which means that condition (CCP) will not hold when Δ is small enough. In other words, power shifts slowly, actors would be able to accommodate the resulting smaller changes and avoid fighting. This is why scholars usually say that the commitment problem arises when there are **large and rapid power shifts**.

The logic now readily extends to the *ideal* war model if one assumes that fighting can slow down the process of consolidation: power shifts at a declining rate. If peace would allow power to shift too quickly, the declining actor would fight. If the battle does not end with a decisive victory, some consolidation will occur but since the rate is assumed to be declining, at some point the remaining size of the power shift will be small enough to allow the actors to negotiate a peace even though such a peace would result in the complete consolidation of one of the opponent. Thus, actors fight in order to forestall adverse shifts in power. When the shift slows down enough, peace becomes possible.

¹This section is somewhat loosely based on two articles. Robert Powell. 2006. "War as a Commitment Problem," *International Organization*, 60(Winter): 169–203. Robert Powell. 2012. "Persistent Fighting and Shifting Power," *American Journal of Political Science*, 53(3): 620–37.

Another approach to modeling *ideal* war is to assume that actors have finite military resources and those are depleted while fighting continues. War then does two things — it reduces the size of the benefit (as before) but it also limits the effort that actors can dedicate to fighting. Consider now a situation in which actors can negotiate a distribution of the benefit but that after the settlement is implemented (or if no agreement is reached), they get to decide whether to engage in a military contest (a battle, or an engagement). If an actor attacks the other, then a battle is fought, and it can either end in a decisive military victory for one of the actors (like our simple war) or it can end in stalemate. A decisive military victory ends the war in the usual way: to the winner go the remaining spoils. A stalemate enables the actors to negotiate again, and then decide whether to fight another battle, and so on. The process of bargaining and fighting continues until one the following happens: (a) one of the actors defeats the other with a decisive battle; (b) one of the actors collapses from attrition of his resources; or (c) neither chooses to attack once a settlement is reached.²

We next introduce the potential for power shifts in this *ideal* war model by assuming that if an actor surprises the opponent — that is, attacks when the opponent does not expect him to — he is more likely to win that particular battle (not the war). This means that a sneak attack creates a power shift in favor of the attacker. Even though this advantage is temporary, it does offer a hope for a permanent resolution if the battle turns out to be decisive. Peace requires not merely negotiating a distribution of benefits that both actors prefer to war that they expect to occur, but one that both prefer to launching a surprise attack on the opponent.

How can actors confidently expect peace in such a scenario? If the sneak attack succeeds, the winner gets to enjoy the entire of the surviving benefit unmolested, which gives the incentive to violate the peace. The disincentive to doing so must therefore arise from the consequences of failing to win that battle. The worse the consequences, the greater the disincentive to launch a surprise attack. Since war in this model is a sequence of decisions to fight battles, the *greatest disincentive* to violate the peace would be to threaten to fight an *absolute* war if that happens. In other words, if an actor violates the peace by launching a surprise attack, the fighting will continue until either one of them is decisively defeated in battle or collapses from attrition; there will be no further negotiations. *Mutual deterrence is best sustained with threats to fight absolute war.*

Early in the war, the total size of the benefit not yet destroyed is very large, and so the advantage of the power shift from a sneak attack is fairly substantial, making early peace very unlikely. Even threats to fight to the finish will not be able to deter sneak attacks. However, as the damage accumulates, the expected benefit from a surprise attack declines, and so the threat of absolute war can eventually provide a sufficient disincentive. This makes peace with threats of absolute war possible, and the fighting can end. The very destructiveness of war reduces the size of the benefit from the power shift, and opens up the road to war termination. In this way fighting can resolve the commitment problem that caused the war in the first place.

So far, so good, but we need to ask: are threats of absolute war credible? No, they are not, at least not in general, and here's why. Suppose that an actor launches a surprise attack but

²This section summarizes the article by Bahar Leventoglu and Branislav L. Slantchev. 2007. "The Armed Peace: A Punctuated Equilibrium Theory of War," *American Journal of Political Science*, 51(4): 755–71.

neither wins a decisive victory. According to the threats that were supposed to sustain the peace, they must now continue the war until the very end; they must fight an *absolute* war. Both know that such a war is going to be very long and very costly, so both would prefer to settle it sooner. Of course, they have to face the commitment problem yet again in the new negotiations, but in general they will have opportunities in which they can negotiate sustainable terms before one of them is disarmed. Since they have a mutual interest in avoiding total war, this means that when such an opportunity presents itself, the actors will take it, and the fighting will end short of one of the actors getting disarmed. But if this is true, neither actor should expect to fight an *absolute* war — they should expect only to fight until the first opportunity to negotiate peace; that is, fight an *ideal* war. Thus, the only credible threats they can make involve fighting until such an eventuality, not until one of them is disarmed. In other words, *threats of absolute war are generally not credible, and the credible threats of ideal war are weaker.*

But if threats of absolute war are not credible, they cannot be expected to produce mutual deterrence; i.e., they cannot sustain the peace. Since threats of ideal war are credible, they can sustain mutual deterrence, but because they are weaker, they cannot do so in all circumstances where threats of absolute war would have worked. In other words, the actors would have to fight longer before they can reach a window of opportunity for peace supported by threats of ideal war. This point is worth emphasizing: *if actors could commit to punish violations of an agreement with an absolute war that can only end in disarming, peace would be easier to achieve than if they commit to fight an ideal war that can end with a peace settlement.* The irony is that despite the desirability of making such absolute war threats, they actors cannot credibly do so precisely because peace is so desirable. This is the **paradox of wanting peace**: the very desirability of peace makes war more likely.

These models also imply that commitment problems might be very difficult to resolve, and as such might even be a more persistent cause of war than mutual optimism. War occurs because of the expectations that a large and rapid power shift can create, and fighting continues in order to change the environment so that either the size of the effect or the speed of that shift are minimized.

4 Sources of Power Shift Anxieties

The commitment problem can arise from various factors. One reason that appears quite often in both historical works and in justification for military action by politicians is the fear of decline relative to the power of an opponent. This is said to trigger a preventive war. Historian A.J.P. Taylor has claimed, with some exaggeration, that

Every war between Great Powers [between 1848 and 1918] started as a preventive war.³

This type of war arises from an attempt to forestall an adverse shift in power, and so important variables to consider would be the perceptions of relative decline that might be

³A.J.P. Taylor. 1980. *The Struggle for Mastery in Europe, 1848–1918*. Oxford: Oxford University Press, p. 166. For a useful discussion of preventive war and different “better-now-than-later” reasons to fight, see Jack S. Levy. 2008. “Preventive War and Democratic Politics,” *International Studies Quarterly*, 52: 1–24.

due to technological and economic development of the opponent that one cannot hope to match, along with perceptions of hostility that support the expectation that the opponent will, in fact, use its newly acquired powers against one's interests. This perception can arise out of one's view of the opponent's political system or society if that view attributes to them militarism or aggressive intent.

Perhaps the most famous (and maybe the earliest) statement of this logic can be found in Thucydides' explanation of why Sparta decided on war with Athens in 431 B.C. Using a squabble between Athens and its ally Corinth as pretext, Sparta declared that the Athenians had violated the Thirty Years' Peace (which had only lasted thirteen years), and effectively declared war. As Thucydides puts it,

The Spartans voted that the treaty had been broken, and that war must be declared, not so much because they were persuaded by the arguments of their allies, as because they feared the growth of the power of the Athenians, seeing most of Hellas already subject to them.⁴

The growth in question was happening because the commercial city of Athens had been free to trade after the expulsion of the Persians from Greece. The Athenians had also rebuilt the *Long Walls* that made the city impregnable to a land assault and ensured its supply from sea through their enclosure of the connection to the port of Piraeus. This action vexed the Spartans because it effectively neutralized their formidable land army, and they had no navy with which to threaten Athens from the sea.⁵ The Athenians cleverly used their wealth and the interminable inter-city fights among the Greeks to bully and attract many, increasing the number of tribute-paying members of the Delian League. This tribute also swelled the flow of money into Athenian coffers, funding further expansion and public works in the city. All of this caused the reclusive Spartans to lose influence in Greece. The long-term trend was unmistakable: should Athens be permitted to continue its policies unchecked, the distribution of power would shift away from Sparta, probably decisively and permanently. This led Thucydides to interpret the second Peloponnesian War as essentially a preventive war by Sparta against Athens.

One concept closely related to preventive war is that of **preemptive war**, which differs from preventive war merely in that the opponent is perceived as poised for an imminent attack and there is some advantage to be had in striking first. The commitment problem arises from the opponent's inability to promise credibly not to use the advantage of striking first. Since doing so creates an instantaneous power shift in the opponent's favor, one might be tempted to attack in order to prevent that from happening. Thus, the underlying logic is exactly the same as the one we have been exploring, and the difference from prevention is only one of timing.

For this trigger, one might look at military technology. One possibility is a technology that gives a decisive advantage to striking first. For example, consider the nuclear balance

⁴Thucydides. 1996. *The Landmark Thucydides: A Comprehensive Guide to the Peloponnesian War*, edited by Robert B. Strassler. New York: Touchstone, p. 47 (1.88).

⁵After nearly thirty years of fighting, the Spartans finally managed to assemble a fleet with which they successfully blockaded Piraeus, forcing Athens to surrender in 404 B.C. After their victory, the Spartans promptly destroyed the walls.

between the United States and the Soviet Union from 1949 until the mid 1960s. During that period both sides possessed nuclear weapons but had neither the numbers nor the defenses to ensure their protection from a surprise first strike. Whoever struck first could, in principle, completely disable the nuclear capability of the other.⁶ Thus, if striking first would give the attacker probability p_H of prevailing, allowing the opponent to strike first would create an instantaneous power shift in favor of the opponent, so one's probability of winning would immediately drop to p_L . If the advantage of striking first is large enough, then this shift would create a commitment problem and cause war.

A less apocalyptic scenario involves the ability to achieve rapid concentration of one's military force and defeat the opponent before he is fully prepared to engage. For example, in the 19th century, Prussia's military organization was local — reservists lived only at most a few hours away from where they were supposed to go when called to arms, which meant that Prussia could mobilize its army very rapidly. In contrast, Austria's military organization was national — reservists were deliberately assigned to depots in different parts of the country in order to minimize the probability that they would join local rebellions. This meant that Austria's mobilization would be much slower once the call to arms was given. By 1866, Prussia's railway system was far better developed than the Austrian and had far more links to the territories where fighting could occur. This meant that once mobilized, Prussia could move its armies faster and supply them more reliably than the Austrians could theirs. Even though the Austrians had more allies (almost all German states sided with them against Prussia), and even though their combined resources were greater, Prussia's superior ability to concentrate its forces created a power shift in Prussia's favor. Since this advantage would be eroded if Austria were given the time to mobilize properly, Prussia had to strike preemptively. Even though Austria declared it, it was the Prussians who won the Seven Weeks War of 1866.⁷

I should note that whereas it is perhaps easier to justify preemption on the ground that war is inevitable anyway, it is much harder to justify prevention, which, after all promises the certainty of war today in response to a possibly vague threat in the future. As the German Chancellor Otto von Bismarck, who had presided over the Prussian victories in 1866 (over Austria) and in 1871 (over France), once told the Reichstag,

[Waging preventive war because] it is possible that in some years we might be attacked... [is like committing] suicide from fear of death.⁸

⁶Only with the advent of nuclear submarines did survivability become feasible. Eventually both sides developed *second-strike capability*: they could absorb a surprise first strike but would still have enough surviving nuclear weapons to launch a devastating retaliatory strike. The era of *mutually assured destruction* had arrived.

⁷France supported Prussia in this war out of desire to reduce the influence of the Habsburgs in Europe but it soon came to regret it. In 1870, France also declared war on Prussia but was just as unprepared as Austria had been. The Prussians mobilized and utilized their superior railways before the French were even half-ready to meet them. Having achieved rapid concentration, Prussia invaded France and defeated the Emperor at Sedan.

⁸“Es ist möglich, dass wir in einigen Jahren einmal angegriffen werden, damit wir dem nun zuvorkommen, fallen wir rasch über unsere Nachbarn her und hauen sie zusammen, ehe sie sich vollständig erholen — gewissermaßen Selbstmord aus Besorgniß vor dem Tode.” Reichstag protocols, 1875/76, 2, pp. 1329-30 (February 9, 1876). Online in German at http://www.reichstagsprotokolle.de/Blatt3_k2_bsb00018381_00571.html, accessed December 28, 2012.

This is not to say that such a war is impossible. As we shall see when we discuss the First World War, there is a well-established tradition of arguing that Germany's attack was predicated on a preemptive logic: the failure to beat Britain in the arms race or the rising power of Russia are said to have contributed to the decision to fight before it was too late. Ironically, some have also blamed Germany's own rise after the Unification as a contributing factor.⁹

The anxiety implicit in the notion of a preemptive war can arise from an escalating sense of **mutual alarm** caused by military movements or arming decisions made for essentially defensive purposes by the actor. The problem with arming is that often the type of weapons one acquires can be just as useful in attacking as they are in defending.¹⁰ If their purpose is not neatly delineated — and it usually is not — then each actor must rely on its “guesstimate” of the opponent's intentions. When one group feels threatened by another, it can arm itself to maintain a more favorable distribution of power. In doing so, however, it might make the other group feel threatened in turn (after all, there is no way of knowing whether one is arming for defense or in preparation of attack), and it might respond by increasing its own arming. This action can in turn feed back into the perceptions of the first group, possibly solidifying its view of the opponent as hostile and increasing their suspicions and fears. The first group responds by increasing its own arming, triggering another feedback into the perceptions of its opponent, and so on. This arms race is accompanied by increasing anxiety and might lead to a preemptive strike if there are advantages of moving first.¹¹

Finally, commitment problems arising from rapid power shifts can also be caused when the disputed benefit cannot be easily divided without affecting its value. For example, consider a mountain with a single pass. Whoever controls the pass can have a large military advantage. If he is attacked, the mountain is easier to defend. If he attacks, he will not have to get through a heavily defended mountain. The benefit cannot be shared because the moment one actor takes possession of the pass, the power shifts in his favor, creating the potential for a commitment problem. We shall return to this issue in the last section, where we shall also consider other sources of “indivisibility” that might make the benefit more difficult to divide in ways that can satisfy the war expectations of both sides.

⁹Niall Ferguson. 1999. *The Pity of War: Explaining World War I*. London: Penguin Books. James Joll. 1992. *The Origins of the First World War*. London: Longman.

¹⁰Even military installations that appear to be solely defensive — like a castle — might be perceived as offensive if they enable the opponent to secure a line of communication, a base from which to launch an attack, or provide for the defense of one territory so that it can free its hands to attack another.

¹¹The act of making a military move designed to enhance one's security but which, in fact, might well end up worsening it because it triggers a counter-move by the opponent is called the **Security Dilemma**. The escalation logic of mutually reinforcing anxieties is sometimes called the **Spiral Model of War**. See Robert Jervis. 1976. *Perception and Misperception in International Politics*. Princeton: Princeton University Press, Chapter 3.