Military Alliances and Intervention

1 The Puzzle of Alliances

Two or more states form a military alliance when they conclude a formal treaty that specifies the actions each should take in the event of some military contingency, usually war. These agreements are explicit records of the obligations each signatory undertakes, and so are written statements of the common expectations of what actions will be undertaken conditional on the contingency that activates these obligations occurring.

Since alliances are anticipatory (that is, they specify conditions that activate obligations), we can use the various contingencies that they deal with to group them:

- A **defense pact** specifies conditions that must be met for a country to come to the aid of its ally. States agree to help each other if one of them is attacked, but not to assist the other if it attacks a third party.
- Very similar to a nonaggression pact, a **neutrality pact** is a promise not to join another state in an attack on the other signatory. That is, it is an agreement to stay neutral in case of war. It is a bit stronger than a nonaggression pact because it implies no attack but also no indirect help for the states at war with the signatory.
- A **nonaggression pact** is a promise not to attack the other state. There is no implication about the relationship with states that might be at war with the other signatory.
- An **entente** is just an agreement to consult with one another in case any member is attacked or gets involved in a crisis. There are no provisions for active military assistance.

Alliances exist for variety of reasons, but can be thought of as *involving different degrees of commitments*, from rather loose promises (ententes) to very specific obligations (defense pacts). Under conditions of anarchy, there is nothing that can prevent states from reneging on their promises. Alliances are subject to the same credibility requirements as any other form of commitment. Alliances must be *self-enforcing*; if they are to work at all, it must be the case that each signatory finds it in his best self-interest to abide by the provisions of the agreement. Otherwise, states would have no incentive to live up to their commitments, and alliances would be worth less than the paper they are written on.

Allies would only honor their promises if it is in their interest to do so. If everyone understands this, the question then becomes, Why bother writing the alliances down in the first place? Alliances are neither necessary nor sufficient to ensure intervention on behalf of another state. If it is the case that alliances generate no commitment beyond what the players would have done on their own anyway, then why bother allying?

2 A Simple Model of Alliance Behavior

Because all types of alliances involve various degrees of commitment, we can fruitfully analyze them all with a single abstract setting. An alliance involves at least three parties, the two players who are contemplating forming one, and a third party whose behavior may produce a crisis with the potential for military confrontation.

Consider the model of alliance formation depicted in Figure 1. There are three states, labeled (D)efender, (C)hallenger, and (P)rotege. There is some potential conflict of interest between the protege and the challenger. The game begins with the defender's decision to ally with the protege. Regardless of whether it allies or not, the challenger can then fight the protege or not. If it does not, the status quo prevails. If it does, the protege can either capitulate, ending the game, or resist, precipitating a war. The last move is the defender's where it chooses, with or without an alliance, whether to aid the protege or abandon it to fight the war on its own.

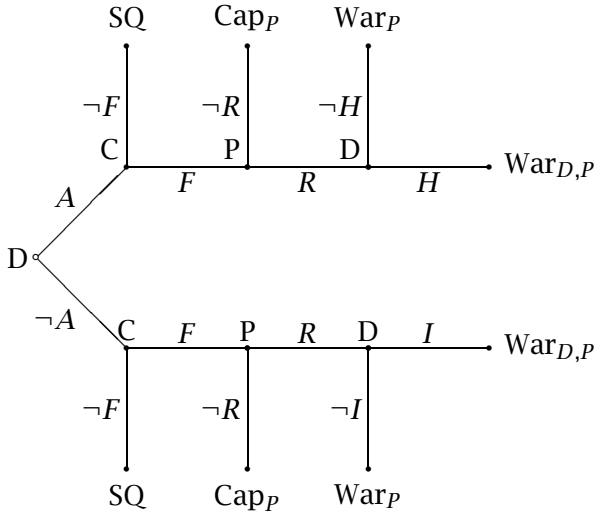

Figure 1: The Alliance Model.

To specify the payoffs for the game, assume that the challenger prefers a revision of the status quo, even if it means war with the protege but not if it means war with both the protege and the defender:

$$u_C(\text{Cap}_P) > u_C(\text{War}_P) > u_C(\text{SQ}) > u_C(\text{War}_{D,P}).$$

We also assume that the protege would resist a challenger only if aided by the defender, so

$$u_P(\text{SQ}) > u_P(\text{War}_{D,P}) > u_P(\text{Cap}_P) > u_P(\text{War}_P).$$

As for the defender, we only assume that the status quo is its most preferred alternative. The relationship between its preferences over the other three outcomes will actually determine the various ways the game can be played in equilibrium.

To analyze this relationship, we have to be more precise about the costs and benefits of having the alliance. First, assume that allying with P is costly to D even in the absence of

fighting, and let $k > 0$ denote these *peacetime costs*. There are several ways alliances can be costly even if they are never tested. Allies may have to coordinate foreign policies, which is costly if it leads them to adopt some policies they otherwise would not. These are the costs of policy alignment and (it is worth emphasizing that) they are incurred even if the alliance is never actually tested.

Another way k can occur is through increasing the vulnerability of fighting on your own. Alliances that require military coordination involve restructuring of forces that may render one (or both) allies quite incapable of doing much on their own. For example, Britain had been reducing its naval forces relying on U.S. obligations in NATO to defend the Atlantic, which made Britain weaker there. This was one of the factors that Argentina tried to exploit in 1982 in the Falklands War.

We assume that whenever D chooses to ally with P, it automatically incurs costs k, whether or not C actually chooses to fight. This immediately implies that D's utility of the status quo with an alliance is lower than the utility of the status quo without one:

$$u_D(\text{SQ}|A) = u_D(\text{SQ}|\neg A) - k \Rightarrow u_D(\text{SQ}|A) < u_D(\text{SQ}|\neg A).$$

Where we read the expression $u_D(\text{SQ}|A)$ as "D's utility from SQ given an alliance" and the expression $u_D(\text{SQ}|\neg A)$ as "D's utility from SQ given no alliance." All other things equal, if the status quo is to prevail, D would rather avoid signing an alliance with P.

3 The Decision to Intervene: Credible Commitment

Since we'll use backward induction to analyze the game, we shall have to begin with D's choices at the last decision nodes. In the upper portion of the tree, D has to decide whether to honor its obligations now that war has begun. In the lower portion of the game tree, it has to decide whether to intervene on P's behalf even though it has no alliance with it.

D's decision will depend on the expected utilities of the various outcomes. It will honor the alliance as long as the expected utility of doing so exceeds the expected utility of reneging. But what is the expected utility of reneging? Let p denote the probability that P wins by itself, then the expected payoff from letting P and C fight it out is

$$EU_D(\text{War}_P|A) = pu_D(\text{Win}_P) + (1-p)u_D(\text{Lose}_P) - k.$$

Note that D still pays the peacetime alliance costs. Let q denote the probability that C is defeated if P and D fight together, and let $c > 0$ denote D's costs of fighting. The defender's expected utility of honoring the alliance is then

$$EU_D(\text{War}_{D,P}|A) = qu_D(\text{Win}_{D,P}) + (1-q)u_D(\text{Lose}_{D,P}) - k - c.$$

Here, D pays the additional costs of fighting. So, D will honor its alliance as long as

$$EU_D(\text{War}_{D,P}|A) > EU_D(\text{War}_P|A)$$
$$qu_D(\text{Win}_{D,P}) + (1-q)u_D(\text{Lose}_{D,P}) - pu_D(\text{Win}_P) - (1-p)u_D(\text{Lose}_P) > c$$

or, rearranging terms[1],

$$\begin{aligned} c < \quad & (q-p)\left[u_D(\text{Win}_P) - u_D(\text{Lose}_P)\right] && \text{(i)} \\ & + q\left[u_D(\text{Win}_{D,P}) - u_D(\text{Win}_P)\right] && \text{(ii)} \\ & + (1-q)\left[u_D(\text{Lose}_{D,P}) - u_D(\text{Lose}_P)\right] && \text{(iii)} \end{aligned}$$

We immediately make several important observations:

- The costs of forming the alliance, k, are irrelevant for the decision to honor it when it is challenged. These are **sunk costs**, which D pays regardless of what it does at this point, and so do not enter its calculations. This is more general result: *Rational players always ignore sunk costs when making decisions.*
- The costs of honoring the alliance, c, on the other hand, are crucially important for the decision to honor it. They have to be sufficiently low for D to help P. How low precisely is determined by the three factors on the right-hand side (RHS) in the expression above.
- Consider (i). The difference $(q-p)$ represents D's marginal effect on P's chances of defeating C. It is the increase in the probability of victory over C if D joins the fight relative to the probability if P fights alone. This marginal effect is weighed by D's relative preference that P defeats C, the utility difference in the expression.

  All else equal, D will be more likely to intervene if its military contribution to victory is likely to be effective. This implies that the stronger D is relative to P and C, the more likely it is to help. Also, D will be more likely to intervene if it really cares about P not losing the war, and so as the stakes become more important from D's perspective, it is more likely to help.
- Consider (ii). This represents the individual gains that D expects to get from intervening over what it would have gotten if P won the war by itself. That is, the benefits of helping rather than staying neutral. Usually, this takes the form of side-payments for help.[2]
- Consider (iii). This represents the individual losses that D expects to incur from intervening over what it would have suffered if P lost the war by itself. These are the costs of helping (and losing) rather than staying neutral. These are beyond the costs of fighting, and are additional punishments for the losers.[3]

[1] To get this expression, add $qu_D(\text{Win}_P) - qu_D(\text{Win}_P) + qu_D(\text{Lose}_P) - qu_D(\text{Lose}_P)$ to the left-hand side of the inequality, and group terms. The expression you are adding sums to 0, and so does not change the inequality itself.

[2] For example, the U.S. promised the USSR a share of the spoils of war in Asia if the Russians helped defeat Japan after the victory in Europe. The Soviets honored the agreement and intervened in Manchuria even though by this time the U.S. was looking for ways of escaping this arrangement because it had become obvious that Japan would be defeated without Soviet help anyway.

[3] Very frequently countries lose territories for joining on the losing side. The Ottoman Empire, which also joined the Central Powers in the First World War, lost enormous territories in the peace settlement. In fact, it ceased to be an empire and became a lot like what Turkey looks today.

Alliances can increase the probability of victory because they provide opportunities for military coordination that would be absent if D intervened without an alliance. Recall that q denotes the probability that D and P win if they fight together when they have an alliance. Let $r < q$ denote the probability that they win if they fight together without an alliance.

If we refer back to expressions (i)-(iii) above, we can simply substitute r for q to obtain the conditions for non-allied intervention. For simplicity we shall assume that the utilities for the different outcomes are the same whether the countries are allied or not. Because $r < q$, and higher values of q made intervention mode likely,[4] we immediately obtain an additional insight:

- All else equal, D is less likely to intervene if it does not have an alliance with P than if it does as long as alliances improve the chances of success.

How can D credibly commit to helping P? Since an alliance improves military coordination, it makes it more likely that a state would intervene to help its ally because the chances of prevailing in the fight together are much bigger. This improves the credibility of the commitment.

Another way an alliance may make commitments more credible is through the now familiar mechanism of audience costs that are imposed on the allied state that fails to honor its commitments. The audiences can be external—other states who see the defection and infer either that D is an unreliable partner, and so refuse to cooperate with it, or that D is unwilling to fight, and so become more likely to challenge its interests in the future. Failing to honor commitments may have external reputational effects.

The audiences can also be internal, as in domestic audience who impose costs on leaders who fail to abide by their commitments. Leaders can be quite sensitive to threats of sanctions if they defect, as Britain's Prime Minister Chamberlain was to the pressure from the House of Commons to abide by Britain's commitment to defend Poland in 1939.

Whatever their source, audience costs can be represented in a simple way in the model by just subtracting a positive term from the expected utility of not intervening on P's behalf when there is an alliance. This makes it clear that as the audience costs increase, the expected utility of reneging would decrease and at some point it will drop below the expected utility of helping. In other words, audience costs can provide a commitment device whenever there is an alliance but do not (because there is no formal promise to do anything) whenever there is no alliance. We shall also see how audience costs can help in signaling.

Thus, everything that changes the calculations in (i)-(iii) the way we discussed and anything that constrains a state's ability to renege on its commitment would tend to make the threat to intervene more credible. With these considerations in hand, we now turn to analyzing how an alliance may change the challenger's decision. Because the promise to help is not binding, alliances are only important if they influence the perceptions of the third party before conflict begins and cause it to alter its calculations accordingly.

[4] To see this, note that increasing q leads to increases in (i) and (ii) and to a decrease in (iii), so the overall effect would be to boost the expected utility of intervening, making intervention more likely.

4 The Decision to Ally: Costly Signaling

Consider the lower portion of the game tree (D and P are not allied). Suppose first that the payoffs are such that $EU_D(\text{War}_{D,P}|\neg A) > EU_D(\text{War}_P|\neg A)$. That is, D's expected utility of intervening on behalf of P with which it has no alliance is larger than the expected utility of letting P fight by itself. The rational decision for D is to intervene.

Given that D intervenes, P would resist because it prefers fighting together with D to capitulating. And given that P resists and D helps it even without an alliance, C would choose not to fight. The subgame perfect equilibrium in this subgame is C does not challenge, P resists, and D intervenes. The equilibrium outcome is the status quo.

But if D found it preferable to intervene without an alliance, then it would find it preferable to intervene with one because the probability of winning would be higher. This means that the subgame perfect equilibrium in the upper subgame is the same as the lower subgame, and the outcome is also the status quo. However, because in this case D pays peacetime costs of allying with P, its payoff is strictly worse than the SQ payoff without alliance. So, D would choose not to ally with P at the initial node.

When the commitment is strong, an alliance is unnecessary. This characterizes the relationship between the U.S. and Israel. Because the U.S. threat to intervene if Israel is invaded is credible, there is no need for an alliance that would impose peacetime costs but not increase the deterrent value of the threat.

Suppose now the payoffs are such that $EU_D(\text{War}_{D,P}|\neg A) < EU_D(\text{War}_P|\neg A)$. That is, D's expected utility of intervening on behalf of P with which it has no alliance is smaller than the expected utility of letting P fight by itself. The rational decision for D would be not to intervene.

Given that D does not intervene, P would not resist because $u_P(\text{Cap}_P) > u_P(\text{War}_P)$, and so it would capitulate. Given that it capitulates, C certainly chooses to fight because $u_C(\text{Cap}_P) > u_C(\text{SQ})$. The subgame perfect equilibrium in the lower subgame then is C fights, P capitulates, and D does not intervene. The subgame perfect equilibrium outcome is Cap_P, the capitulation by P.

To determine whether D would ally with P, we have to analyze the upper subgame. Suppose that an alliance improves military coordination sufficiently, and so $EU_D(\text{War}_{D,P}|A) > EU_D(\text{War}_P|A)$. That is, D's potential contribution to victory is high if it is allied with P even though it would be insufficient if it is not allied. In this case, D would honor the alliance.

Given that D honors the alliance, P's best response to a challenge would be to resist it because $u_C(\text{War}_{D,P}) > u_C(\text{Cap}_P)$. But given that P would resist, C has no incentive to challenge because $u_C(SQ) > u_C(\text{War}_{D,P})$. The subgame perfect equilibrium in this subgame under the assumption of military coordination between the allies is C does not challenge, P resists, and D honors the alliance. The subgame perfect equilibrium outcome is SQ.

Finally, we're back to the initial decision by D. If it allies with P, its payoff would be $u_D(SQ|A)$ where it enjoys the status quo but pays the peacetime costs of alliance k. If it does not ally with P, the payoff would be $u_D(\text{Cap}_P)$. As long as the prospect of the protege capitulating is painful enough, D would bear the peacetime costs of forming an alliance.

Of course, this entire equilibrium depends on D's commitment to honor the alliance. In the example above we assumed that this commitment was credible by making intervention

in favor of an ally profitable. From *C*'s perspective, however, this commitment may be questionable. Suppose everybody knew that *D* would not intervene without an alliance, just as we assumed above. Further suppose that *C* is uncertain whether the alliance actually provides a sufficient boost to the probability of victory to make *D* want to honor it. In other words, *C* does not know whether it is playing a subgame equivalent to the bottom one in which *P* capitulates.[5] We now want to know how the act of allying can signal to *C* that *D* is actually going to honor its obligations under the alliance terms.

The act of allying can send a credible signal because it carries a higher risk of war for the defender. If an ally is more likely than a non-allied state to intervene (and as we saw from the discussion above, this is likely to be the case), then a protege is more likely to resist when allied with the defender than otherwise because it becomes more confident of its support. In fact, *P* may even behave much more aggressively if allied, dragging *D* with it into a fight.

The defender may attempt to prevent this entrapment by spelling out every possible detail of the contingency that would activate its obligations. But states rarely do that because having everything too precise also makes it clear to *C* what issues it can safely choose to challenge *P* on. Alliances usually spell out certain contingencies but leave other vague, and so the **risk of entrapment** exists there. There is a trade-off between this risk and the deterrent effect produced by leaving *C* uncertain whether it can safely challenge on the issues left vague.

Vagueness can thus impose costs on the defender because of the risk involved, and having an alliance that is not quite specific may signal resolve to intervene even on issues that are not precisely spelled. However, it may also signal unwillingness to specify these issues and thus retain loopholes which may undermine the commitments. The risk of entrapment, however, can serve as a costly signal when combined with **audience costs**.

Recall that audience costs serve as a commitment device once an alliance is challenged. If the defender is more likely to intervene, the protege is also more likely to resist, making the probability that intervention would be necessary much higher. Leaders with high audience costs may therefore be unwilling to get involved in alliances when their interest in the protege is not great enough because they fear being dragged into intervention by the protege who chooses to resist the challenger. But it is precisely because leaders who face high audience costs choose to ally only when their interests in the protege are sufficiently strong that an alliance sends a strong informative signal to the challenger.

As in crises, audience costs help leaders signal the extent of their commitments in a credible way. Leaders who are weak (in the sense that they would rather not help if push comes to shove) would find it too costly to ally because they would rather not get dragged into fighting. This means that allying can send a costly (and therefore credible) signal about resolve and willingness to fight.

Finally, as I mentioned before, allying can send a credible signal if it decreases the ability of the state to win on its own. Suppose *D*'s interest in the protege is big. The defender will strictly prefer to form an alliance that reduces its ability to fight on its own but increases

[5] We are not going to model that game explicitly for, although easy to do, the tools required to analyze it are beyond the scope of this course. Those interested in game theoretic analysis of situations with incomplete information should take more specialized courses on the topic.

the ability to fight together with the ally.

Thus, *D* may rationally choose to *sink costs* because doing so can send a signal even though these costs will become irrelevant if the alliance is challenged. By sinking costs, *D* commits itself to a course of action following the familiar technique of constraining one's choices. Thus, even though *sunk* costs are irrelevant for its decision, *sinking* costs is an important strategy because of its signaling and commitment values.

5 Selection Effects

Looking at the historical record reveals that a rather substantial number of alliance commitments are not honored when challenged. (The numbers vary and can go as high as 70%.) Alliances seem irrelevant when they are needed most. Many people argue that since alliances tend not to be honored when challenged, they are worthless.

But our logic of signaling and commitment demonstrates that **when alliances work as they are supposed to, the empirical record will reveal precisely a high rate of failure of challenged alliances**. This may appear a startling result, but let's think through the logic again.

When the commitment is extremely credible, there is no need for an alliance. There are many cases then in which challenges may not be made simply because the defender's threat to intervene is believable even without an alliance. States would tend to form alliances when there is some potential doubt about the extent of their commitment. That is, alliances are attempts to overcome credibility problems. This immediately implies that the cases where there is an alliance are precisely those cases where the potential for a challenge is much higher because the challenger may not believe the interventionist threat.

Of the cases with alliances, challengers only attack when they think that either the protege would capitulate or will be forced to fight alone. That is, they only challenge alliances they believe do not credibly commit the defender to intervene. In other words, attackers will only challenge weak alliances. But if challengers estimate the strength of the alliance more or less correctly, then we shall see them attacking only when the defenders will fail to honor their commitments. This immediately implies that the empirical record of alliances should be quite dismal: whenever an alliance is challenged, the failure rate would be high.

This is called a **selection effect**, which refers to the fact that cases of alliance failure are not random, but are "selected" by the strategic interaction. These cases are not typical alliances, they represent situations where (a) there was a credibility gap, and so a need for an alliance in the first place, and (b) the challenger judged that the credibility gap still existed even with the alliance. If alliances work as advertised, we should see the track record that we observe. This does not mean alliances are meaningless, but quite the contrary. All those non-events (non-challenges) that do not get selected into the historical record are the cases where the alliances may have worked.

As a general rule, be extremely cautious when you interpret the "lessons of history" whenever the outcome involves strategic interaction. The cases in history are produced by complicated interactions of beliefs and strategies and the outcome may be quite misleading unless these are taken into account.

6 Summary

- **Alliances** are promises to perform (or not perform) certain military actions under specified contingencies.
- Alliances vary with the degree of commitments, from loose promises (entente), to more concrete promise not to attack the other (nonaggression pacts), to even more binding promise to remain neutral if the other is attacked (neutrality pact), to the most binding promise for mutual defense in case of attack (defense pact).
- There are two stages in each alliance model, the commitment (or defense) stage, where an ally has to honor its obligations when its protege is attacked; and the signaling stage, where an state may signal its intentions to defend the protege by forming an alliance.
- Alliances only have value if (a) they increase the probability that states would assist each other if challenged, and (b) they decrease the probability of a challenge through establishing a credible deterrent threat.
- Alliances are costly to maintain, but once they are formed, these are **sunk costs** and they no longer influence the decision to intervene. The costs of honoring an alliance, however, are crucially important.
- An ally would intervene if doing so increases the chances of victory, and the gains from victory outweigh the costs of defeat and the costs of seeing the protege defeated by itself or victorious by itself.
- Alliances increase military coordination and improve the chances of victory if allies fight together. They may also decrease their chances if they fight alone.
- Alliances may create **audience costs**, either external or domestic, which can serve as a commitment device that increases the defender's credibility to honor its obligations. They also may generate the **risk of entrapment**, which provides another way to send a **costly signal** to the potential challenger.
- Challengers only attack alliances when they believe the threat to intervene is not credible, that is, they challenge weak alliances. This leads to a **selection effect** in the empirical record: We expect to observe that whenever challenged, most alliances would tend to fail.