The Competition in Risk Taking

1 Strategic Moves

Bargaining is the process through which players attempt to influence their opponents' expectations, which is done primarily through threats and promises, or commitments. For a commitment to be effective, it has to be credible. That is, it has to be communicated (and understood) and it has to be believable.

We examined two ways of establishing credible commitments: by constraining your own choices, and by relinquishing the initiative to the opponent. We found that, paradoxically, being "weak" in a traditional sense — either because one had fewer option or because one let the ultimate decision to someone else — meant being strong in the bargaining sense.

1.1 Constraining Choice and Communication

You can limit the number of available options and therefore escape the embarrassing richness of choice that may make you vulnerable. In essence, you are trying to eliminate all options that you will be severely tempted to make use of should the need arise. What you are really trying to avoid is the need for that option arising in the first place. That is, you hope that by constraining your own choice, your opponent would not take the actions that cause this situation to arise.

This strategy depends on (a) your opponent correctly understanding your commitment, and (b) you being able to eliminate the option. This means that **destroying communication** (or making yourself unavailable to learn about the commitment) is one way to avoid being trapped by this strategy. It does not matter how committed you are, if I do not know about it, it will serve you little.

If I can convince you that I am irrational or stupid and therefore cannot understand your commitment, I render myself immune to your threats and win because you (being the rational and smart one) would have no choice but back down. Children often understand this much better than adults. A kid pretending to be dumb or not hear is simply implementing a pretty good tactic of making himself unavailable to receive information about your very credible commitment that is not in its interest. A kid knows that if he acknowledges hearing his mom calling him to come home, he has no choice but go home or else. Playing with abandon and ignoring her ever sterner shrieks is a much better strategy, which he only has to defend with the innocently-sounding "I did not hear you!"

This idea of **fostering irrationality** is not limited to children. President Nixon, for example, once remarked to his National Security Advisor and later Secretary of State Henry Kissinger that it would be good for the Russians and the North Vietnamese to think that he

was "out of control" and so could use the nukes if an agreement on peace is not achieved soon. This was an attempt to escape the rational logic that precluded the use of nuclears in such a peripheral theater. It did not work (not that Nixon was entirely sane).

More interestingly, a leader may constrain his choices by simply making it impossible for him to make decisions! For example, a civilian government may delegate control of nuclear weapons to the military, which has a clear mission to defend the country, may not be subject to the pressures and debates of a civilian government, and so may be prompt with their use. The French, for example, toyed with this idea for a long time. Similarly, there were serious proposals to let the Germans have direct control over NATO nuclear weapons in Europe because they could commit much more credibly to using them against invading Russians than the Americans. Or, one can let computers play out the warfare scenario and relinquish choice completely.

Automating the response was actually a tactic that the Russians claimed to be pursuing for a while. Chairman Khrushchev told the Americans that it did not matter whether Berlin was worth more to them or to the Americans; if a military confrontation ensued, Khrushchev claimed that the Soviet rockets would *fly automatically*. The interview was published in the premier policy journal "Foreign Affairs" and caused quite a stir at the time.

1.2 Relinquishing the Initiative

The other strategy we discussed was relinquishing the initiative. This involves shifting the responsibility for a mutually disastrous outcome to the other player. This does not involve (or does not have to involve) constraining one's own choice. In fact, the commitment here is already assumed to be credible but instead of taking the lead in exploiting that, the player stays put and lets the other make the painful decision.

The point of both strategies, however, is place the final decision (the last clear chance to avoid disaster) in the hands of the opponent and thereby secure his concessions. When simply relinquishing initiative your own commitment is already credible and you are simply giving the opponent the chance to bow out. As I pointed out, it is necessary to make sure that your opponent does indeed have this option and that he has not committed also by, say, constraining *his* choices and eliminating the possibility of exit.

In essence, the two strategies rely on the same mechanism to increase bargaining power. They both leave the ultimate painful choice to the opponent who, being fully aware that you could not back down even if you wanted to, has no rational course of action but do your bidding.

2 Brinkmanship: The Modified Chess Game

The two other strategies, like the two we discussed, also share an underlying logic between themselves. One is the **threat that leaves something to chance** and the other is the strategy of **limited retaliation**. These strategies depend on the willingness of the players to run a **risk of undesired and unintended consequences**.

Imagine a chess game. You are playing the Whites and I am playing the Reds. The game, as usual, can end in win, loss, or a draw. However, we now modify the game by adding a fourth outcome called *disaster*, which is strictly worse *for both players* than simply losing the game. For example, if disaster occurs, we both pay hefty fines to a third party.

The new rules specify very clearly what causes disaster. Specifically, if either player has moved his knight across the middle of the board and the other player moves his queen across the middle, then disaster strikes immediately. It does not matter whether the knight or queen are moved first.

How would two rational players play this game? One thing we can tell for certain is that it will never end in disaster because this outcome is always under control of the players and they both have incentives to avoid it. The disaster outcome can only occur if some player deliberately makes a move that ends the game according to the new rule. Since disaster is the worst possible outcome, no rational player would ever make this move.

This is not to say that the knights and the queens will stay on their side of the board. Indeed, because of this certainty of disaster on the last move, players can use strategic moves that exploit the situation for its inherent credibility. If I, for example, am the first to move his queen across the board and keep it there, you are effectively deterred from moving your knights across. As long as the queen is on that side, I have credibly committed to threatening you with disaster should you move the knights across.

In fact, I am threatening you with something that you would cause should you take the proscribed move. The consequences follow automatically and I am unable to do anything about that. To wit, I am threatening you with a war that you start! As before, disaster is unpalatable to both, and even if it were more costly to me than to you, the threat would still be effective as long as your costs are sufficiently high compared to the other possible outcomes, and so you would still be deterred. I have successfully constrained my choice and relinquished the initiative to you, and it is you who gets to be embarrassed by the multitude of choices at your disposal.

The virtue of this modified game is that the rules are completely clear and it is always known with certainty who has committed and who has the last move that avoids disaster or causes it. In real-life, of course, things are not as clear. We don't always know (or can even calculate) who would be the last to move. Certain situations create their own escalatory logic that might blow up in both our faces with neither really intending it.

We modify the modified chess game. We keep disaster outcome and amend the rule to say that should the necessary conditions occur a referee rolls a die and if six comes up disaster occurs. If the die shows any other number, the game continues. If the conditions still exist after a player makes the next move, the die is rolled again, and so on. That is, every time the conditions are met, there is a one-sixth chance of disaster. (In our language, we transform the necessary and sufficient conditions into ones that are only necessary but not sufficient.)

This is now a very different game indeed. In particular we can easily imagine circumstances where knights and queens would move to the "wrong" side of the board, creating a *shared risk of disaster*. If, for example, you move your queen across, I can try to compel you to move it back by deliberately placing both of us in a risky and dangerous situation. I can move my knight across and at every turn while the situation persists we both risk a

one-sixth probability that we end up badly. If you lose your nerve before I do, that is, if your willingness to run risks is not as high as mine, I win because you would retreat.

Notice how different this is from before. In the original modification, whoever moved his relevant piece across the board first won. There were no imaginable circumstances where we would both have the queens and the knights one the "wrong" sides of the board. The reason for that, of course, is that the threat is extremely effective: in fact, its fulfilment is completely automated by the rules.

In the modified version of the modified chess game, however, this certainty is gone. What's more interesting, players are able to threaten each other with a disaster that would hurt both. This was not a possibility in the original modification because once someone commits, the other cannot pressure him to retreat by threatening to move his chess piece across too. The certainty of disaster ensures that no such threat can be credible. In this version, on the other hand, such threats can be made and probably will be made.

You can apply the technique of constraining your own choices to this environment as well. For example, suppose you have moved your queen across and I want to compel you to move it back. However, you are much more resolved than I am and we both know it. If I can bring myself to run the risk of disaster at least twice, however, I can win nevertheless: I move my knight across, thereby placing us both in jeopardy. However, since I know that in the war of nerves you will probably win, I then move another piece such that it blocks the knight's way back. Now I cannot retreat even if I wanted to and it is up to you to do something to relieve the risk. If I can commit myself to continue to run the risks and make clear to you that you are the only one who can diffuse the situation, you would have no choice but back down and retreat.

The strategy of taking your opponent to the brink of shared disaster and compelling him to turn back first. Schelling calls it "manipulating the shared risk of war" and it really involves the deliberate creation of risk that can only be relieved when the opponent takes an action that suits your purposes. Brinkmanship is a war of nerves, it is about risk-acceptance and fear more than it is about cool rational calculations.

3 The Threat That Leaves Something to Chance

Why don't we just threaten with something certain? Why "simply" create a *risk* that something *may* happen?

Threatening with too big a stick can be a problem because it may lack credibility. For example, consider the original modification of chess. Suppose you move your queen across and I verbally tell you that unless you retreat I will move my knight and we both end up with the disastrous outcome.

We have already seen that it does not matter whether this outcome hurts you more than it hurts me. As long as it hurts me sufficiently (and it does because according to the rules it is even worse than a loss), my threat will not be credible. You obviously cannot avert the disaster *if* I make the final move. I know it. You know that I know it. And I know that you know that I know it. We also both know that it is up to me to make the fatal last move. You can just sit smugly and smile at me while I rail against the rules being stacked in your

favor, the world being cold and heartless, and nobody caring about my predicament. None of that would help, of course. You win and we both know it.

A similar problem occurs with threatening massive retaliation in response to conventional military infractions. The stick is too big and too dangerous to be believable. Even when the United States had first-strike capability many wondered if this nation could use the nukes for a third time with impunity and with total disregard of the extent of the threat they are supposed to diffuse. Say the Soviets invade some dinky little third world country with a population of 1 million. Can the United States threaten to blow up Moscow (population of 10 million) in retaliation? Probably not and the Russians knew it. The gun is too powerful and so the threat to use it is not credible.

When it is not possible to threaten credibly because the action would hurt you too much, you can threaten with the *risk* or *probability* that the action would be carried out *despite your best intentions to avoid it*. Uncertainty, so the speak, scales down the threat (you will read about this in Schelling's book where he talks about randomized threats).

This risk of carrying out the action in spite of your own attempts to prevent is inherent in many complex situations. First, you may simply make an error in assessing your opponent's freedom of choice and intentions. Maybe the opponent cannot or would not back down. In any case, the risk of misperception is clearly present. Second, and more interestingly, the threat may be carried out even when it should not have been. Maybe your opponent backs down but before you have the chance to stop it, events are set in motion that lead to disaster anyway. Brinkmanship is a slippery slope, maybe at some point it is no longer possible to avert disaster and nobody is quite sure where this point really is. That's the third possibility: we both may become committed to the escalatory steps without even realizing it and may not be able to escape them even if *we both wanted to*.[1]

The threat that leaves something to chance (very aptly named) depends on creating this shared risk of disaster. Once created, the players engage in a competition in risk-taking in the sense that the outcome depends on resolve and nerve.[2]

4 Coercive Pressure with Limited Retaliation

The other very similar strategy that depends on the generation of risk is the strategy of limited retaliation. Instead of creating a situation where ultimate disaster may strike, one takes a series of small steps (hence the word "limited" in the name of the strategy) that do two things. First, they increase the probability that the ultimate disastrous event may occur because they generate an additional risk of that happening and further steps presumably escalate that risk. Second, they involve giving the opponent explicit incentives to back down

[1] If you have not seen the film *Fail-Safe*, I absolutely recommend it. In it, the Americans and the Soviets become committed to escalatory actions that result in disaster with neither side wanting it and both trying to help each other avoid it. What begins as a routine day and a small technical mishap turns into a global disaster. See the original film with Henry Fonda and Walter Mathau not the recent George Clooney remake.

[2] Paradoxically, it is not always the side with the most resolve or steely nerves that prevails and succeeds in getting the other one back down. Showing this requires a bit more game theory than we have covered in class, however. Interestingly, a player may be more instead of less likely to escalate the situation the more resolved its opponent is.

that are unrelated to the risk of disaster.

By destroying methodically but in limited quantities things of value to the opponent, you give him the chance to stop the destruction while he still has something of value left. The problem with the big stick (again) is that if the threat is carried out, the opponent has nothing left to care for. In the strategy of massive retaliation, we destroy the Soviet cities, for example. But if the opponent stands to lose everything, he will fight back as hard as he can, which is not what we want. We only want them to back down.

Suppose that instead of initiating a nuclear war, whether deliberately or by accident, we target Soviet cities but only destroy one. We then tell them that unless they retreat we will destroy another. If they don't retreat, we destroy a second city. And so on and so forth, gradually turning the pressure up, but always letting them back down. The reason such a strategy might work is because despite of the pain, the Soviets are left something they care for: their other cities. It is the threat to destroy these cities, not the pain of having already lost some, that might compel them to back down.

This strategy gradually imposes costs on the opponent but, more importantly, it threatens to impose more costs in the future. A player would be unable to threaten with more costs if it destroys everything his opponent values in one fell swoop. A threat that leaves quite a bit to the adversary is a lot more credible than a massive murderous one. In fact, part of the credibility problem with the massive threat is generated by the consequences of nuclear war. If we threaten with a massive nuclear strike, then the Soviets, with nothing to lose, have incentives to strike back and impose as great costs on us as possible. With a limited strategy, on the other hand, they may be induced not even to retaliate because they are afraid that if they do, they would lose even more.

If you think that this is cold and heartless, you are right. However, Robert McNamara, the U.S. Secretary of Defense during the Kennedy and Johnson administrations made a speech in 1962 in which he proposed this very strategy, the so-called "No-Cities Doctrine". The Russians were very quick to denounce it by claiming that no limited option existed in a nuclear war. Once the missiles start flying all bets are off. The Soviets quite correctly perceived how such a strategy would deny them bargaining power. They had a lot of imprecise missiles with which they can threaten massive strikes but not careful limited retaliation in return. So they did not like it.

The essence of this approach is very similar to the one used by the threat that leaves something to chance. The strategy of limited retaliation also increases the credibility of the threat of future destruction. By exercising the limited option, a player can demonstrate that its resolve is greater than that of its adversary, just like with the threat that leaves something to chance, where it did so by revealing its willingness to run risks of disaster.

5 The Generation of Risk

Obviously, these are very dangerous tactics; *they would not work unless they were dangerous because it is the generation of risk that makes them potentially worthwhile.* How is that risk generated?

Rational opponents would never cross the brink of disaster willingly. However, even

rational opponents may do so unwittingly, unintentionally, and by accident or sheer bad luck. The essential idea here is to blur the brink. If you cannot clearly see where it is, you can walk perilously close to it. If you could see it, then you might be tempted to stay away, just to make sure nothing actually tips you over.

So how do we blur the brink? By generating the fear that things may get out of hand. Many have heard of the "fog of war" a situation during tense moments of conflict where communication is uncertain, decision makers are not fully in control of events, accidents happen, and everyone's nerves are so tight that they might snap. Many of the mechanisms that generate risk actually preclude firm control of its escalation or its degree, thereby further enhancing the fear factor. This is sometimes called an **autonomous risk** because it is generated by events beyond one's control.

The crucial point is that you have to arrange things in such a way that neither you nor your opponent knows precisely just where the brink is. If you know, you would definitely never escalate beyond it. If he knows, he can push up to it and you run the risk of giving up because you think it is dangerous while he knows that it is safe. The threat is therefore one of unintended consequences, an inadvertent escalation, not a cool rational one.

6 Summary

- We can establish a credible commitment by **constraining our choices** and **relinquishing initiative**.
- In both tactics, we leave the final crucial decision, the **last clear chance to avert disaster** to the opponent.
- These tactics depend on **communicating the commitment** or else they would be ineffective.
- Making oneself unavailable to receive communication is one way to escape such tactics.
- The **threat that leaves something to chance** is a tactic that threatens with the **risk of undesired and unintended consequences**.
- **Brinkmanship** is the art of creating a **shared risk of disaster** by pulling the opponent to the brink and letting him retreat first.
- The **strategy of limited retaliation** threatens with increasing costs and risks; that is, it threatens with future punishment.
- Both tactics depend on players' resolve and nerve; their willingness to run risks; they both increase the credibility of the threat of future destruction.
- Both risk strategies depend on the generation of risk, especially **autonomous risk** like accidents and inadvertent consequences.