MAKING STRATEGIES CREDIBLE

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If William Malden were to advertise Thomas Schelling’s way of strategic thinking, the ad copy would surely read: “Don’t Compete Without It.” His way of framing strategic issues brings a new dimension to politics, business, and everyday life. If everything seems more complicated, its more interesting too.

In this essay, we look at one small part of Schelling’s universe – how to make strategies credible. This question allows us to bring together his contributions to bargaining, international conflict, and even the battle for self-control.1 First, we describe the problem.

In most situations, mere verbal promises should not be trusted. Sam Goldwyn expressed this perfectly: “A verbal contract isn’t worth the paper it’s written on.”2 An incident from The Maltese Falcon, filmed by Goldwyn’s competitor Warner Brothers, illustrates the point. Gutman, played by Sydney Greenstreet, gives Sam Spade, played by Humphry Bogart, an envelope containing ten thousand dollars.

“Spade looked up smiling. He said mildly: ‘We were talking about more money than this.’ ‘Yes sir, we were,’ Gutman agreed, ‘but, we were talking then. This is actual money, genuine coin of the realm. With a dollar of this, you can buy more than with ten dollars of talk.’”

This lesson can be traced all the way back to Thomas Hobbes: “the bonds of words are too weak to bridle men’s avarice.”3 Women’s too, as King Lear discovered to his great regret.

If a threat or promise is purely oral, what incentive do you have to keep your word? If it is in your interest to cheat, why won’t you? But then others will ahead and predict that you have no incentive to follow through, and your strategic move will not have the desired effect.

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1 In the latter case, Schelling calls this “Strategic Economics,” the strategy of consciously coping with one’s own behavior. See his essay, "The Intimate Contest for Self-Command."


3 Hobbes Leviathan (Chapter 14).
The whole point behind strategic moves such as threats and promises is to change someone else’s expectations about your response to their action. This will fail if they believe that you will not carry out any threats or promises you make. Without any effect on others’ expectations, there will be no effect on their actions.

Establishing credibility in the strategic sense means that you are expected to go keep your promises; it also means that you are expected to make good on your threats. Commitments are unlikely to be taken at face value. Your commitment may be tested. Credibility must be earned.

Credibility requires finding a way to prevent going back. If there is no tomorrow, today’s commitment cannot be reversed. The fact that death-bed testimony can never be altered leads the courts to give it tremendous weight. More commonly, there is a tomorrow (and a day after) so that we must explore the problem of how to maintain commitment over the long haul. Feast today for tomorrow we fast is the excuse for putting on today what can be taken off tomorrow.

THE EIGHTFOLD PATH TO CREDIBILITY

Making strategic moves credible is not easy. But it is not impossible, either. We now offer eight devices for achieving credible commitments. Like the Buddhist prescription for Nirvana, we call this the “eightfold path” to credibility. Depending on the circumstances, one or more of these may prove effective. Behind this system are three underlying principles.

First, you can change the payoffs of the game. The idea is to make it in your interest to follow through on your commitment: turn a threat into a warning, a promise into an assurance. This can be done through a variety of ways.

1. Establish and use a reputation
2. Write contracts

Both these tactics share the feature that they make breaking the commitment more costly than keeping it.

A second avenue is to change the game to limit your ability to back out of a commitment. In this category, we consider three possibilities. Most severe is the approach: if this arm offends thee, cut it off. Simply deny yourself any opportunity to back down either by cutting yourself off from the situation or destroying any avenues of retreat. There is even the possibility of removing yourself from the decision-making position and leaving the outcome to chance.

3. Cut off communication.
4. Burn bridges behind you.
5. Leave the outcome to chance.

These two principles can be combined: both the possible actions and their outcomes can be changed. If a large commitment is broken down into many smaller ones, then the gain from breaking a little one may be more than offset by the loss of the remaining contract. Thus we have

6. Move in small steps.
A third route is to *use others to help you maintain commitment*. A team may achieve credibility more easily than an individual. Or you may simply hire others to act in your behalf.

7. Develop credibility through teamwork.

8. Employ mandated negotiating agents.

**Reputation**

If you try a strategic move in a game and then back off, you may lose your reputation for credibility. In a once-in-a-lifetime situation, reputation may be unimportant and therefore of little commitment value. But, you typically play several games with different rivals at the same time, or the same rivals at different times. Then you have an incentive to establish a reputation, and this serves as a commitment that makes your strategic moves credible.

During the Berlin crisis in 1961, John Kennedy explained the importance of the U.S. reputation:

"If we do not meet our commitments to Berlin, where will we later stand? If we are not true to our word there, all that we have achieved in collective security, which relies on these words, will mean nothing."\(^4\)

Another example is Israel's standing policy not to negotiate with terrorists. This is a threat intended to deter terrorists from taking hostages to barter for ransom or release of prisoners. If the no-negotiation threat is credible, terrorists will come to recognize the futility of their actions. In the meantime, Israel's resolve will be tested. Each instance where the threat must be carried out hurts Israel; a refusal to compromise may sacrifice Israeli hostages' lives. In order to maintain credibility, each confrontation with terrorists puts Israel's reputation on the line. Giving in means more than just meeting the current demands; it makes future terrorism more attractive.\(^5\)

Reputation effect is a two-edged sword for commitment. Sometimes, by destroying your reputation, you create the possibility for a commitment. Destroying your reputation commits you *not* to take actions in the future that you can predict will not be in your best interests.

The question of whether or not to negotiate with hijackers helps illustrate the point. Before any particular hijacking has occurred, the government might decide to deter hijackings by threatening never to negotiate. However, the hijackers predict that after they commandeer the jet, the government will find it impossible to enforce a no-negotiation posture. Each event would be considered a special case and the exception would become the rule. How can a government deny itself the ability to negotiate with hijackers?

One answer is to destroy the credibility of its promises. Imagine that after reaching a negotiated settlement, the government breaks its commitment and attacks the hijackers.

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\(^5\) Even the Israelis have lost some of their reputation for toughness. Their willingness to swap 3,000 Arab prisoners for 3 of their airforce pilots suggests that their pilots are worth making an exception for.
This destroys any reputation the government has for trustworthy treatment of hijackers. The government loses the ability to make a credible promise, and irreversibly denies itself the temptation to respond to a hijacker's threat. This destruction of the credibility of a promise makes credible the threat never to negotiate.

Congress has a similar problem of maintaining consistency over time when it comes to tax amnesty programs. Such a program allows those who owe back taxes to pay up without penalty. An amnesty program appears to be a costless way of raising more revenue. All those who have second thoughts about cheating on their taxes give the government money. In fact, if it could be credibly established that there would never be another amnesty, then Congress could raise additional tax revenues at no cost. But, if amnesty was such a good idea once, why not try it again in a few years? Nothing prevents Congress from offering an amnesty on a regular basis. Then a problem arises. Cheating becomes more attractive since there will be the possibility of getting amnesty in the future.

Congress needs to find a commitment to prevent itself from ever repeating the amnesty program. In a Wall Street Journal article, Robert Barro and Alan Stockman propose an amnesty followed by reneging on the promise and prosecuting of those who turn themselves in. This will raise even more revenue than a simple amnesty. And after the government cheats on its amnesty, who would believe the government were it to try again? By destroying its credibility, the government can make a credible commitment not to offer an amnesty again.

You will probably think this is an absurd idea, and with good reason. First, it will not work against strategically aware taxpayers. They will expect that the government to renege its promise, so they will not participate in the amnesty at all. More importantly, catching tax cheaters is not the only game in town. While double-crossing tax cheaters may be good in this game, it will cause greater harm to the government's reputation in others.

One of the most impressive examples of how building a reputation belongs to the Mayflower furniture company. In a large billboard located along the Massachusetts Turnpike, they proudly advertise that they have gone 147 years without a sale. (Are they still waiting for their first customer?) This unconditional commitment to everyday low prices brings in a steady stream of customers. A sale might temporarily raise profits but it will be another 147 years before they can repeat such a clever advertisement. Next year, we expect the sign will read 148 years. The reputation becomes self-perpetuating as it becomes more valuable.

In all these instances, the player cultivates a reputation with the direct and conscious aim of achieving the credibility of future unconditional commitments, threats and promises. However, reputation can also arise for non-strategic reasons, and yet be just as powerful in achieving credibility. The feeling of pride in not breaking one's word is an example. Thomas Hobbes suggested this as one of two ways in which the weak bonds of words can be strengthened: a fear of the consequence of breaking one's word; or a glory, or pride, in not breaking it. Such pride is often instilled into the value system of people through education or general social conditioning. It may even have the implicit social aim of improving the credibility of our manifold daily relationships. Yet we are not told to take pride in being honorable because it will bring us strategic advantage by making our threats and promises credible; we are told that honor is a good thing in itself.
Making Strategies Credible

Someone who has a reputation for being crazy can make successful threats that would be incredible coming from a saner and cooler person. In this way, apparent irrationality can become good strategic rationality. One can even cultivate such a reputation. A seeming madman, therefore, may be a superior strategist, because his threats are more readily believed. Could Colonel Gadhafi and Ayatollah Khomeini have understood this principle better than the cool, rational leaders of Western nations trying to deal with them? We do not know, but we are willing to bet that your child who is too irrational to be deterred by your threats of punishment is a better instinctive game-player than you are.

Contract

A straightforward way to make your commitment credible is to agree to a punishment if you fail to follow through. If your kitchen remodeler gets a large payment up front, he is tempted to slow down the work. But a contract that specifies payment linked to the progress of the work and penalty clauses for delay can make it in his interest to stick to the schedule. The contract is the commitment device.

Actually, it's not quite that simple. Imagine that a dieting husband agrees to pay his wife $500 if ever she catches him eating any fattening food. Every time the husband thinks of a Twinkie he knows that it just isn't worth $501 (including the buck for the Twinky).

But this contract has a fatal flaw. The very fact that it succeeds dooms it to failure. The problem is that there is no mechanism to prevent renegotiation of the contract. With visions of twinkies dancing in his head, the husband should argue to his wife that under the present contractual agreement, she will never be paid the $500 penalty since he will never violate the contract. Hence, the contract is worthless to her. It would be in their mutual interest, the husband argues, for the couple to sit down and renegotiate. For example, the husband might offer the wife $20 to buy himself out of the contract. The wife prefers $20 to nothing and lets her man out of the contract.

For the contracting approach to be successful the party that enforces the action or collects the penalty must have some independent incentive to do so. In the dieting problem, the wife might want to have a skinnier husband and thus not be tempted by a mere twenty dollars. In the case of physical threat, sadists might be hired to carry them out. This can lead to a no-lose (or no-win) situation as in

Masochist: "Hit me."
Sadist: "No."
Masochist: "Thank you."

Now there is the problem of ensuring that the sadist doesn't carry out the threat purely for his own pleasure even after the other player has complied.

In business dealings, the contracting approach is more likely to succeed. If a contract is broken there are typically damages so that the injured party is not willing to give up on the contract for naught. For example, a producer might demand a penalty from a supplier who fails to deliver. The producer is not indifferent about whether the supplier delivers or not. He is more interested in getting his supply than in receiving the penalty sum. Renegotiating the contract is no longer a mutually attractive option.
Think of what happens now if the supplier tries the dieter's argument. The supplier attempts to renegotiate on the grounds that the penalty is so large that the contract will always be honored and the producer will never receive the penalty. This is just what the producer wants and hence he is not interested in renegotiation. The reason why the contract works is that the producer is not solely interested in the penalty; he cares about the actions promised in the contract.

It is possible to write contracts with neutral parties as enforcers. A neutral party is someone who don't have any personal interest in whether the contract is upheld. To make enforcement credible, the neutral party must be made to care about whether or not the commitment is kept by creating a reputation effect. In some instances, the contract holder might lose his job if he allows the contract to be rewritten. Schelling provides a remarkable example of how these ideas have been implemented in his commencement address to the Rand Graduate School. In Denver, there is a center which treats wealthy cocaine addicts by having them write a self-incriminating letter which will be made public if they fail random urine analysis. After placing themselves voluntarily in this position, many will try to buy their way back out of the contract. But, the person who holds the contract will lose his job if the contract is rewritten; the center will lose its reputation if it fails to fire employees who allow contracts to be rewritten.

The moral is that contracts alone cannot overcome the credibility problem; to be successful they need to employ some additional credibility tool such as employing parties with independent interests in enforcement or a reputation at stake. In fact, if the reputation effect is strong enough, it may be unnecessary to formalize a contract. This is the sense of a someone's word being his bond.

Cutting off Communication

Cutting off communication succeeds as a credible commitment device because it can make an action truly irreversible. An extreme form of this tactic arises in the terms of a last will and testament. Once the party has died, renegotiation is virtually impossible. (For example, it took an act of the British parliament to change Cecil Rhodes's will in order to allow for female Rhodes Scholars.) In general, where there is a will, there is a way to make your strategy credible.

For example, most universities have price lists for a chair. The going rate is about $1.5 million. These prices are not carved in stone (nor covered in ivy). Universities have been known to bend their rules in order to accept the terms and the money of deceased donors who fail to meet the current prices.

Of course this is rather extreme and one need not die trying to make commitments credible. Irreversibility stands watch at every mailbox. Who amongst us has not mailed a letter that we wished we could we retrieve? And it works the other way. Who amongst us has not received a letter we wish we hadn't; but you can't send it back and pretend you've never read it once you've opened the letter.

Before it became widespread, a successful commitment device was to mail one's bill payments in unstamped letters with no return address. Mailing a letter with no return

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7 On the other hand, among college professors, there is a saying, "A handshake is good enough between businessmen. But when your university's Dean promises you something, get it in writing."
address is an irreversible commitment. The post office used to deliver such letters and the receiver could accept delivery by paying the postage due. A utility or phone company knew that such a letter was likely to contain a check. It would rather pay the postage due than wait another billing cycle before receiving payment (or another unstamped letter with no return address).

The solution to the companies' problem was for the post office to change its policy. Letters without postage are no longer delivered to the addressee; they are returned to the sender if there is a return address and not delivered if there is no return address – a major change in policy. Thus the company has committed itself never to receive a letter with postage due. It knows that upon receiving such a letter, it would want to give in and pay the postage due. So it changes the rules of the game and does not allow itself to be put in that weak position.

But what if you put the companies address as both the mailing address and the return address? Now the post office has someone to return the letter to. Remember, you didn't hear this idea here first. And if it begins to spread, rest assured that the post office rules will be changed so that letters without a stamp are not even returned to the sender.

Of course, this strategy is not without drawbacks. Schelling is quick to remind us of the difficulties with cutting off communication as a device to maintain commitment. If you are incommunicado, it may be difficult if not impossible to make sure that others have acceded with your wishes. You must hire others to ensure that the contract is being honored. For example, wills are carried out by trustees, not the deceased. A parental rule against smoking may be exempt from debate while the parents are away, but unenforceable too.

**Burning Bridges Behind You**

Armies often achieve commitment by denying themselves an opportunity to retreat. This strategy goes back at least to 1066 and William the Conqueror. His invading army burned its own ships, thus making an unconditional commitment to fight rather than retreat. Cortes followed the same strategy in his conquest of Mexico. Upon his arrival in Cempoalla, Mexico, Cortes gave orders that led to all but one of his ships being burnt or disabled. Although his soldiers were vastly outnumbered, this left them with no choice but to fight and win. “Had [Cortes] failed, it might well seem an act of madness. ... Yet it was the fruit of deliberate calculation. ... There was no alternative in his mind but to succeed or perish.”

Destroying the ships gave Cortes two advantages. First, his own soldiers were united each knowing that they would *all* fight until the end since desertion (or even retreat) was an impossibility. Second, and more importantly, is the effect this commitment has on the opposition. They knew that Cortes must either succeed or perish, while they had the option of retreat into their homeland. They chose to retreat rather than fight such a determined opponent. For this type of commitment to have the proposed effects, it must be understood by the soldiers (yours and the enemy’s), not just by the armchair strategists. Thus it is especially interesting that “the destruction of the fleet [was] accomplished not only with the knowledge, but the approbation of the army, though at the

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8 Prescott (1896) *The History of the Conquest of Mexico* Vol. 1, Ch. 8, Gibbins and Co. London.
suggestion of Cortes."

This idea of burning one's own ships demonstrates the evolution of strategic thinking over time. The Trojans seemed to get it all backwards when the Greeks sailed to Troy to rescue Helen.\textsuperscript{10} The Greeks tried to conquer the city, while the Trojans tried to burn the Greek ships. But if the Trojans had succeeded in burning the Greek fleet, where would the Greeks have to go? Burning the Greek ships would have simply made the Greeks all the more determined opponents. In fact, the Trojans failed to burn the Greek fleet. This failure turned out to their advantage when they saw the Greeks sail home in retreat. Of course the Greeks left behind a gift horse, which in retrospect the Trojans were a bit too quick to accept.\textsuperscript{11}

In modern times, this strategy applies to attacks on land as well as by sea. For many years, Edwin Land's Polaroid corporation purposefully refused to diversify out of the instant photography business. With all its chips in instant photography, it was committed to fight against any intruder to their market.

On April 20, 1976, after twenty eight years of a Polaroid monopoly on the instant photography market, Eastman Kodak entered the fray: it announced a new instant film and camera. Polaroid responded aggressively. They sued Kodak for patent infringement. Edwin Land, founder and chairman, was prepared to defend his turf:

"This is our very soul we are involved with. This is our whole life. For them its just another field. ... We will stay in our lot and protect that lot."

Mark Twain explained this philosophy in \textit{Pudd'nhead Wilson}:

"Behold, the fool saith, 'Put not all thine eggs in one basket' ... but the wise man saith, 'Put all your eggs in one basket and WATCH THAT BASKET.'"

After years of litigation, Polaroid finally won. Kodak was forced to withdraw its film completely off the market. Furthermore, it provided rebates to all its customers who were stuck with its instantly obsolete camera. While Polaroid restored its dominance over the instant photography market, it lost ground to competition from portable video recorders and minilabs that developed and printed conventional film in one hour. Without any bridges, they began to feel trapped on a sinking island. With a change in philosophy, they have begun to branch out into video film and even conventional film.

One need not literally burn bridges, nor ships that bridge oceans. One can burn bridges by taking a political position that will antagonize a select group of voters. When Walter Mondale in his speech accepting the 1984 Democratic Presidential nomination said that he \textit{would} raise taxes if elected, he was making such a commitment. Unfortunately (for him) the group of voters antagonized by this move turned out to be far too large.

\textsuperscript{9} Prescott (1896)

\textsuperscript{10} Although the Trojans may have gotten it backwards, the Greeks were ahead of the game. Schelling cites the Greek general Xenophon as one of the first examples of this type of strategic thinking. Although Xenophon did not literally burn his bridges behind him, he did write about the advantages of fighting with one's back against a gully. See Schelling's "Strategic Analysis and Social Problems."

\textsuperscript{11} This interpretation and further mathematical analysis of strategic commitment may be found in Jeremy Bulow, John Geanakoplos, and Paul Klemperer's paper "Multimarket Oligopoly: Strategic Substitutes and Compliments," \textit{Journal of Political Economy} 1985, 93 pp. 488-511.

\textsuperscript{12} This description and quote comes from Michael Porter, \textit{Competitive Strategy} Free Press: New York, 1983.
LEAVING THE OUTCOME BEYOND YOUR CONTROL

The doomsday device in the movie Dr. Strangelove consisted of large buried nuclear bombs whose explosion would emit enough radioactivity to exterminate all life on earth. The device would be detonated automatically in the event of an attack on the Soviet Union; any attempt to deactivate the device would also set off the explosion. When President Milton Muffley of the U.S. asked if such an automatic trigger was possible, Dr. Strangelove answered: “It is not merely possible; it is essential.”

The device is such a good deterrent because it makes aggression tantamount to suicide. Faced with a Soviet attack, the humane American president Milton Muffley might refrain retaliating and risking mutually assured destruction. If the president had the freedom of response, the Soviets might risk an attack. But with the doomsday device in place, the response is automatic and the deterrent threat is credible.

However, this strategic advantage does not come without a cost. There might be a small accident where you would not really want to carry out the dire threat, but you no longer have such an option once execution is out of your control. This is exactly what happened in Dr. Strangelove.

To reduce the consequences of errors, you want a threat that is no stronger than is necessary to deter the rival. What do you do if the action is indivisible, as a nuclear explosion surely is? How can one moderate a nuclear explosion? You can make the threat milder by creating a risk, but not a certainty, that the dreadful event will occur. This is Thomas Schelling’s idea of brinkmanship.13 As he explained in The Strategy of Conflict:

“Brinkmanship is the deliberate creation of a recognizable risk, a risk that one does not completely control. It is the tactic of deliberately letting the situation get somewhat out of hand, just because its being out of hand may be intolerable to the other party and force his accommodation. It means intimidating an adversary and exposing him to a shared risk, or deterring him by showing that if he makes a contrary move he may disturb us so that we slip over the brink whether we want to or not.”

Brinkmanship both scales down the size of the threat by making it a probability rather than a certainty and then makes this diminished threat credible by leaving the outcome to chance. Hollywood provides two excellent illustrations of how this works in practice. Schelling uses a scene from the film, High Wind in Jamaica.14 “The pirate captain Chavez wants his captive to tell where the money is hidden, and puts his knife to the man’s throat to make him talk. After a moment or two, during which the man keeps his mouth shut, the mate laughs. ‘If you cut his throat he can’t tell you. He knows it. And he knows you know it.’ Chavez puts his knife away and tries something else.”

Chavez might have kept the knife and tried brinkmanship, if only he had seen The Maltese Falcon. There Spade (Humphrey Bogart) has hidden the valuable bird, and Gutman (Sydney Greenstreet) is trying to find out where it is.

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13 Thomas Schelling more or less invented this concept, and certainly pioneered its analysis. This section owes more than we can say to his Strategy of Conflict (Chapters 7, 8) and Arms and Influence (Chapter 3). Many people erroneously say “brinkmanship” — which sounds more like the art of robbing an armored truck.

14 See Arms and Influence, p.70.
“Spade smiled at the Levantine and answered him evenly: ‘You want the bird. I’ve got it. . . . If you kill me how are you going to get the bird? If I know that you can’t afford to kill me till you have it, how are you going to scare me into giving it to you?’"

In response, Gutman explains how he intends to make his threat credible.

‘I see what you mean,’ Gutman chuckled. ‘That is an attitude, sir, that calls for the most delicate judgement on both sides, because as you know, sir, men are likely to forget in the heat of the action where their best interest lies and let their emotions carry them away.’"15

Gutman concedes that he can’t threaten Spade with certain death. Instead, he can expose Spade to a risk, a probability that things might get out of control in the heat of the moment.16 The outcome is left to chance. It’s not that Gutman would actually want to kill Spade, but accidents do occur. And death is irreversible. Gutman cannot commit to killing Spade for sure if Spade refuses to talk. But he can threaten to put Spade in a position where Gutman can not guarantee that he will be able to prevent Spade from getting killed. This ability to expose someone to a probability of punishment can be enough to make the threat effective if the punishment is bad enough.

The greater the risk of Spade getting killed in this way, the more effective is the threat. But at the same time, the risk becomes less tolerable to Gutman, and therefore the threat becomes less credible. Gutman’s brinkmanship will work if, and only if, there is an intermediate range of probabilities where the risk is large enough to compel Spade to reveal the bird’s location, and yet small enough to be acceptable to Gutman. If Spade values his own life more than Gutman values the bird, in the sense that a smaller probability of death will frighten Spade than an equal risk of the loss of the information will give Gutman pause, then such a range exists; otherwise it doesn’t. Brinkmanship is not just the creation of risk, but a careful control of the degree of that risk.

The ability to get off the brink is a final aspect of control that is essential for effective brinkmanship. The threatened party must be able to reduce the risk sufficiently, often all the way to zero, by agreeing to the brinkman’s terms. For example, Spade must have the assurance that Gutman’s temper will cool down sufficiently quickly once he knows the secret. Otherwise you are damned if you do and damned if you don’t, and there is no incentive to comply.

The conduct of America’s trade policy illustrates brinkmanship without the control mechanism. The United States tries to compel the Japanese and the Koreans to open their markets to American exports (and also to export less to the U.S.) by pointing out the risk of more serious protectionist actions in the Congress. “If we can’t reach a moderate agreement, the Congress will enact restrictions that will be a lot worse for you.” The so-called voluntary export restraints on automobiles agreed to by Japan in 1981 were the result of just such a process. The problem with the regular successful use of such tactics in trade negotiations is that they can create risk, but cannot control it within the requisite range. When other issues are occupying the legislators’ attention, the risk of protectionist action in Congress is too low to be an effective threat. On the

15 Dashiell Hammett’s The Maltese Falcon, Pan Books, page 169.

16 This can also be viewed as the strategic rationality of being irrational.
other hand, when the Congress is exercised about trade deficits, the risk is either too high to be acceptable to our own administration, or simply unresponsive to a modest foreign restraint and therefore an ineffective threat. In other words, the American system of checks and balances can create risk, but cannot control it effectively.

The primary application of these ideas arises in the use of nuclear brinkmanship as a deterrent. Many argue that there is a paradox in nuclear weapons because they pose too big a threat ever to use. If their use cannot be rational, then the threat cannot be rational either. This is just the Gutman-Spade exchange writ large. Without the threat value, nuclear weapons are impotent in deterring minor conflicts.

This is why the Europeans fear that N.A.T.O.’s nuclear umbrella may prove a poor shield against the rain of superior Soviet conventional forces. Even if the United States is resolved to defend Europe, the argument goes, the nuclear response is not credible against small Soviet transgressions. The Soviets can exploit this using “salami tactics”, a slice at a time. Imagine that there are riots in West Berlin and some fires. East German fire brigades come to help. Does the U.S. President press the nuclear button? Of course not. East German police arrive in support. The button? No. They stay, and a few days later are replaced by East German troops. At each point, the incremental aggression is too small to merit a drastic response. N.A.T.O. keeps on redrawning the line of its tolerance. Eventually, the Russians could be at Trafalgar Square and Nato Headquarters in exile would be wondering just when it was that they missed their chance.17

This conclusion is mistaken. The threat of a U.S. nuclear response to conventional Soviet aggression in Europe is one of brinkmanship. There are two ways for getting around the problem of redrawing the line. Brinkmanship uses both. You arrange to take the control for punishment out of your hands so as to deny yourself the opportunity to redraw the line. Second, you transform the precipice into a slippery slope. With each step further down the slope there is the risk of losing control and falling into the abyss. In this way, an opponent who tries to avoid your threat through salami tactics finds herself constantly exposed to a small chance of disaster. Each slice she takes, no matter how small, may be the proverbial last straw. The essential ingredient in making this type of threat credible is that neither you nor your rival knows just where the breaking point lies.

A small risk of disaster has the same threat value as the certainty of a smaller punishment. The way the United States uses the nuclear threat is in terms of creating a risk that the missiles will fly even though at that time they will be trying as hard as they can to prevent the attack. The United States makes a threat that will be carried out only in spite of itself. The threat of nuclear weaponry is that it will be used inadvertently. Nuclear deterrence becomes credible when there exists the possibility for any conventional conflict to escalate out of control. The threat is not a certainty but rather a probability of mutual destruction.

With any exercise of brinkmanship, there is always the danger of falling off the brink. While strategists look back at the Cuban Missile Crisis as a successful use of brinkmanship, our evaluation would be very different if the risk of a superpower war — Kennedy estimated it at between one out of three and even — had turned into a reality.18 Kennedy

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17 This hypothetical scenario was painted in an episode of the British television comedy series, Yes, Prime Minister.

18 See Graham Allison’s Essence of Decision: Explaining the Cuban Missile Crisis Boston: Little
would have been accused of recklessly and unnecessarily flaming a crisis into a conflagration. Yet in an exercise of brinkmanship, the risk of falling off the brink will sometimes turn into a reality. The massacre of the Chinese students in June 1989 is a sad example of this outcome. The students occupying Beijing's Tiananmen square were on a collision course with the hard-liners in their government. One side would have to lose; either the hard-liners would lose power to more reform-minded leaders or the students would have to compromise on their demands. During the confrontation, there was a continuous risk that the hard-liners would overreact and use force to put an end to the democracy movement. The idealism of the students confronting this risk kept the world's eye focussed on their movement. There is no excuse for the government's action and we can only hope that they too regret what happened. When two sides are playing a game of brinkmanship and neither side is backing down there is a chance that the situation will get out of control and a regrettable outcome will happen.

**Moving in Steps**

Although two parties may not trust each other when the stakes are large, if the problem of commitment can be reduced to a small enough scale, then the issue of credibility will resolve itself. The threat or promise is broken up into a large number of small pieces and each one is solved separately.

Honor among thieves is restored if they only have to trust each other a little bit at a time. Consider the difference between one person making a million dollar payment to the other for a kilogram of cocaine, and the two of them engaging in in 1,000 sequential transactions each for 1,000 dollars worth of cocaine. While it might be worthwhile to double-cross your "partner" for a million, the gain of 1,000 is too small since it brings a premature end to a profitable ongoing relationship.

Whenever a large degree of commitment is infeasible, one should make do with a small amount and reuse it frequently. Homeowners and contractors are mutually suspicious. The homeowner is afraid of paying up front and finding incomplete or shoddy work. The contractors are afraid that after completing the job, the homeowner might refuse to pay. So at the end of each day (or each week), contractors are paid based on their progress. At most each side risks losing one day’s (or one week’s) work.

As with brinkmanship, moving in small steps reduces the size of the threat or promise and correspondingly the scale of commitment. There is just one feature to watch out for. Those who understand strategic thinking will reason forward and look backwards, and they will worry about the last step. If you expect to be cheated on the last round, you should break off the relationship one round earlier. But then that will be the final round and so you will not have escaped the problem. To avoid the unravelling of trust, there should be no clear final step. As long as there remains a chance of continued business, it will never be worth cheating. So when a shady character tells you this will be his last deal before retiring, be especially cautious.

A second feature of moving in small steps concerns how you expect others to be treated who follow in your footsteps. If they are likely to do better, then there is an advantage of waiting, or at least moving in small steps. To put this in context, we look

Brown (1971).
at the antitrust case of the United States vs. IBM. One of the many issues revolved around IBM’s policy of leasing rather than selling its mainframe computers.

The government argued that IBM’s emphasis on short term leases served as an entry barrier resulting in monopoly profits. IBM defended the practice arguing it was in consumers’ interest. They argued that a short term lease insulates customers from the risk of obsolescence, provides flexibility when needs change, commits IBM to maintain their leased equipment since they are responsible for its operation, and provides financing from the company with the deepest pockets.\textsuperscript{19}

Many find these arguments a convincing defense. Yet there is an altogether different strategic advantage to leasing. Leasing allows IBM to credibly maintain high prices.

Even a company without an outside competitor must worry about competing with its future self. When a new computer is introduced, IBM can sell the first models at very high prices to those impatiently awaiting the technological advance. Then once the computers are available in large numbers, there is the temptation to lower the price and attract more customers. The main cost of producing the computer has already transpired in the development stage. Each additional sale is gravy.

Herein lies the problem. If customers expect that IBM is about to lower its price, they will wait before making their purchase. When the majority of customers are waiting, IBM has an incentive to speed up its price reductions and capture the customers sooner. This idea, first expressed by Ronald Coase in 1972, is that for \textit{durable} goods, a monopolist competes with its future self in a way that makes the market competitive.\textsuperscript{20}

Leasing serves as a commitment device that enables IBM to keep prices high. The reason is that the leasing contracts make it much more costly for IBM to lower its price. When its machines are on short term leases, any price reduction must be passed along to all customers, not just the ones who haven't yet bought. The loss in revenue from the existing customer base may outweigh the increase in new leases. In contrast, when the existing customer base owns its computers, this trade-off does not arise; the customers who already bought the computer at a high price are not eligible for refunds.

Thus leasing is an example of moving in small steps. The steps are the length of the lease. The shorter the lease, the smaller the step. Customers don’t expect IBM to keep its price high when the steps are too big; they will wait for a price reduction and get the same machine a little later a lower price. But if IBM only leases its computers on short renewable contracts, then it is credible for it to maintain high prices, customers have no reason to wait, and IBM earns higher profits.

College professors and author see the same problem arise closer to home in the market for academic textbooks. If commitment were possible, publishers could make more money by bringing out new editions of a textbook on a five year cycle, rather than the more common three year cycle. Greater longevity would increase the value on the used-book market and consequently the student’s initial willingness to pay when a new edition appears. The problem is that once the used books are out there, the publisher has a strong incentive to undercut this competition by bringing out a new edition. Since


everyone expects this to happen, students get are lower price for their used books and thus are less willing to pay for the new editions. The solution for the publisher is the same as for IBM: rent books rather than sell them.

Teamwork

One avenue towards achieving credible commitment is to use others to help us. Although they may be equally weak, individuals can build resolve by forming a group. The successful use of peer pressure to achieve commitment has been made famous by Alcoholics Anonymous (and diet centers too). The peer pressure tactics of Alcoholics Anonymous change the payoffs from breaking your word. They set up a social institution in which pride and self-respect are lost when commitments are broken.

Sometimes teamwork sometimes goes far beyond social pressure; it employs strong arm tactics to force us to keep true to our promises. Consider the problem for the front line of an advancing army. If everyone else charges forward, one soldier who hangs back ever so slightly will increase his chance of survival without significantly lowering the probability that the attack will be successful. If every soldier thought the same way, however, the attack would become a retreat.

Of course it doesn’t happen that way. Soldiers are conditioned through honor to their country, loyalty to their fellow soldiers, and belief in the million dollar wound – an injury that is serious enough to send him home, out of action, but not so serious that he won’t fully recover. Those soldiers who lack the will and the courage to follow orders can count on the penalties for deseretion to keep them advancing. If the punishment for desertion is credible, then the threat of certain and ignominious death makes the alternative of advancing forward much more attractive. But soldiers are not interested in killing their fellow countrymen, even deserters. How can soldiers who have difficulty committing to attack the enemy make a credible commitment to killing their countrymen for desertion?

Tom Schelling tells how the ancient Roman army made falling behind in an attack a capital offense. As the army advanced in a line, any soldier who saw the one next to him falling behind was ordered to immediately kill the deserter. To make this order credible, failing to kill a deserter was also a capital offense. Thus even though a soldier would rather get on with the battle than go back after a deserter, failing to do so could cost him his own life.

The tactics of the Roman army are present today at West Point in the honor code required of students. Exams are not monitored and cheating is an offense that leads to expulsion. But, because students are not inclined to “rat” on their classmates, failure to report observed cheating is also a violation of the honor code. This violation also leads to expulsion. When the honor code is violated, students report crimes because they do not want to become guilty accomplices by their silence. Similarly, we have in criminal law penalties for those who fail to report a crime as an accessory after the fact.

21 For a fascinating account of incentives used to motivate soldiers, see John Keegan’s book The Face of Battle, New York: Viking Press (1976).

22 The motive for punishing deserters is made even stronger if the deserter is given clemency for killing those in line next to him who fail to punish him. Thus if a soldier fails to kill a deserter, there are now two people who can punish: his neighbor and the deserter who could turn the tables and save his own life by punishing those who failed to punish him.
MANDATED NEGOTIATING AGENTS

If a worker says that he cannot accept any offer of wage increase less than 5%, why should the employer believe that he will not subsequently back down and accept 4%? Money on the table induces people to try negotiating one more time.

The worker's situation can be improved if he has some else negotiate for him. When the union leader is the negotiator, his position may be less flexible. He might be forced to keep his promise to prevent loss of support from his electorate. The union leader may secure a restrictive mandate from his members, or put his prestige on the line by declaring his inflexible position in public. In effect, the labor leader becomes a mandated negotiating agent. His authority to act as a negotiator is based on his position. In some cases he simply does not have the authority to compromise; the workers, not the leader must ratify the contract. In other cases, compromise by the leader would result in his removal.

In practice we are also concerned with the means as well as the ends of achieving commitment. If the labor leader voluntarily commits his prestige to a certain position should you (do you) treat his loss of face as you would if it were externally imposed? Someone who tries to stop a train by purposefully tying himself to the railroad tracks may get less sympathy than someone else who has been tied there against his will.

A second type of mandated negotiating agent is a machine. Very few people haggle with vending machines over the price; even fewer do so successfully.23

CONCLUSION

This completes our account of the eightfold way to successful commitment. In this essay, we tried to bring together different elements and applications of strategic thinking. Sadly, there is no simple recipe for making strategies credible. The specifics of each situation are likely to differ in some significant aspects, and any general prescriptions for action we might give could be misleading. In each situation, you will have to pull together principles of good strategy and also other principles from other considerations. You must combine them, and where their dictates conflict with each other, evaluate the relative strengths of the different arguments. We do not promise to solve every question you might have. The science of game theory is far from being complete, and in some ways strategic thinking remains an art. In that art, there is no influence than the vision provided by Thomas Schelling.

23 The Defense Department confirmed that over the past five years, seven U.S. servicemen or dependents have been killed and 39 injured by soft-drink machines that toppled over while being rocked in an attempt to dislodge beverages or change – The International Herald Tribune, June 15, 1988.