

COERCING FLUENTLY:

The Grammar of Coercion in
the Twenty-first Century

C. Anthony Pfaff

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C. Anthony Pfaff

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Foreword

In this monograph, Dr. C. Anthony Pfaff addresses challenges military practitioners experience with competition below the threshold of war. China continues to provoke its neighbors in its near abroad and to expand its influence in Africa and South America. Russia's invasion of Ukraine arguably represents the most significant deterrence failure in recent memory of the United States and its NATO partners. Iran continues to exploit proxies to limit US presence and destabilize the Middle East.

Drawing on insights from game theory, Pfaff offers a sometimes-counterintuitive approach that questions the efficacy of simply relying on imposing costs and raising stakes to change an adversary's behavior. Rather than using game theory to develop predictive models, the intent here is to use the logic of the interactions described in game theory to develop a "grammar" of coercion that can better explain coercive outcomes and thus guide the application of coercive measures in international competition.

Although this analysis is not intended to be comprehensive, it provides "rules of thumb" that can guide interactions with adversaries. I invite readers to learn more about this important topic and to test their assumptions about the challenges associated with coercing adversaries and, when possible, avoiding escalation to war.

Carol V. Evans

Carol V. Evans
Director, Strategic Studies Institute
and US Army War College Press

Executive Summary

This monograph arose out of conversations with military planners on US Army and Combatant Command staffs about the desire for a better understanding of how competition below the threshold of war works and how the military can play a more effective role. Part of the problem appears to be military practitioners often do not adequately distinguish between defeating enemies and coercing them. Whereas the former involves eliminating an enemy's choice, the latter involves bargaining intended to convince the enemy to choose cooperation. Bargaining suggests one must cede dominance and initiative to the other side as well as engage in unseemly manipulation to regain the dominance and initiative. Perhaps more importantly, bargaining works against the logic and grammar of military operations. Military forces win when they destroy—or, at least, neutralize—enemy forces faster than the latter can destroy or neutralize the former. When the goal is not to destroy enemy military forces, military forces may still have utility, but the logic and grammar of employing them is less clear. This monograph seeks to clarify how coercion works so military practitioners can better calibrate demands, deterrent measures, and support for partners to secure vital US interests.

For this discussion, logic is a function of the purpose of an activity, and grammar comprises the rules by which the activity functions. To illustrate the logic and grammar of coercion, this analysis relies on decision-theory methods, such as game theory, that emphasize decision-making processes and their associated logic as well as the attributes—rational or not—of the decisionmakers themselves. The intent here is not to offer predictive models of rational-actor behavior. Rather, the intent is to use game-theory and similar approaches to understand the grammar of coercion better. Models are rarely accurate enough to make reliable predictions, and actors frequently are not rational. By understanding the underlying logic of how various actors, sometimes playing different roles, determine and act on preferences, one can generate general “rules of thumb” (ROTs) for using the tools of international competition.

As Cold War scholar Thomas J. Schelling observed, “the power to hurt and the power to seize” are different. Schelling saw strategic competition as a kind of bargaining—one in which gains for one side reflect a loss for the other side. Under such conditions, a range of outcomes are better for both sides than no agreement, but because any one of these outcomes still represents a better deal for one than the other, any agreement entails a concession by one side. As Schelling further points out, actors concede when they come to the belief their opponent will not concede, and, as a result, the former must choose between no agreement and agreeing on a less optimal option. This bargaining can be explicit, wherein adversaries negotiate directly, or tacit, wherein each adversary observes and interprets the actions of the other while being aware the other is doing the same.

Successful coercion does not depend simply on imposing costs; rather, it depends on placing adversaries in positions in which they must act and their most rational option is the one most beneficial to one's own cause. This analysis describes the logic of various competitive interactions to assist military and policy planners in developing effective policies to facilitate US advantage in strategic competition.

For instance, arms races function much like prisoner's dilemmas, wherein two actors in competition must choose whether to cooperate or defect. The actors are in competition because one actor maximizes its benefit by defecting if the other cooperates. Given both actors are aware of this strategy, the only rational action for both is to defect, despite the benefit to both being higher if they cooperate. Although such models only represent a limited range of interactions, they are useful for illustrating how one should account for features of competitive interaction and the environment. In any given interaction, actors have preferences that determine their best and worst outcomes. Knowing these outcomes can assist actors in choosing the best strategy. Additionally, an actor also needs to be able to address situations in which an adversary has a greater stake in the interaction or the actor is uncertain or has incomplete information about the adversary's preferences.

This discussion considers competitive interactions between actors that have discrete and qualifiable, if not quantifiable, preferences and who behave rationally, though this discussion acknowledges the behavior that is considered rational is frequently informed by nonrational social, cultural, and psychological factors. Thus, as a model for interactions involving fallible—or, at least, unpredictable—humans, this approach has its limits. But this approach can reveal ROTs that can orient and guide actors as they engage in these complex interactions. These rules represent an initial attempt to identify the grammar of the interactions.

This analysis also examines more complex interactions, beginning with the dynamics of compellence. Coercion is hard, and compellence is especially hard even when the compeller is significantly stronger. In part, this difficulty arises because the weaker actor is incentivized to resist out of fear of future demands. Although making costly demands often results in coercive failure, doing so can provide information about adversaries' preferences, which has its own utility. Deterrence comes with its own difficulties. Often, raising the costs associated with an adversary's action raises the stakes, and raising the stakes decreases the incentives to cooperate. Thus, like compellence, getting the deterrent threat right depends on properly calibrating it. Proper calibration, in turn, depends on understanding the difference between mutual deterrence and unilateral deterrence, accounting for allies and partners, and managing escalation.

In addition to 15 ROTs for guiding competitive interactions, this analysis provides the following insights.

Credibility and Capability

Effective coercion depends on a threat that is both credible and capable. Credibility is a function of an adversary believing acting on one's threat would be rational. For example, if an adversary believes the cost to an actor of employing a deterrent measure is less than the cost of conceding to the adversary's challenge, the actor's threat is credible. Credibility, however, is not sufficient to deter an adversary from acting. The actor's threat must also be capable. Capable threats impose a cost on prospective challengers and leave the challengers worse off than if they had not acted.

Thus, an adversary must believe an actor's defense of a particular interest with means adequate to make the adversary's challenge irrational is rational.

Raising the Stakes

In this context, stakes are a function of both the value of the interest and the likelihood of conflict. Thus, the higher the stakes, the more tempting bearing the cost of acting or any subsequent escalation is. Under such conditions, actors may feel an urgency to act because they want the advantages associated with seizing the initiative and are willing to incur costs, regardless of the amount. Thus, one should avoid raising the stakes under these conditions unless escalation and likely war are more in one's interest than the status quo.

Value of the Status Quo

Survival of the status quo depends on how highly valued it is. Even if actors do not prefer the status quo relative their own alternatives, it may still be preferable to the consequences of challenging it.

Calibrating Demands

Even when one has an apparently credible and capable threat, coercion can still fail, especially when making demands. Intuitively, the stronger the actor, the higher the cost the actor can impose on an opponent and, thus, the more likely an opponent will choose not to bear the costs and concede. Unfortunately, this intuition seems to have little application in real-world interactions. For instance, if an actor believes concession will lead to future demands, the actor will be incentivized to resist, even if the demands in question are relatively trivial. If the value of the demand is high for the compelling actor, then concession is likely to impose a correspondingly high cost on the target of the demand, especially in zero-sum bargaining situations. To the extent concession does not impose a correspondingly high cost, the chances for success increase: Getting actors to concede is easier if they do not care much about the object of the demands. Getting actors to concede is also easier if they believe the compeller prefers conflict to concession and their escalation or resistance will fail. Thus, if the value of the demand is equal to or less than the probability of the compeller winning plus the cost incurred by the target for conceding, the coercion should succeed.

Managing Escalation

In cases in which all actors prefer conflict to concession, escalation is all but guaranteed. Even among such actors, opportunities to achieve a more limited outcome than all-out war may present themselves in an escalatory cycle. Escalatory spirals can occur when mutual fear and vulnerability lead an actor to increase its advantage in a way that reinforces similar fears in another actor, often escalating to war. Should a crisis occur under these conditions, escalation is almost certain—especially when an actor's worst outcome is concession. But even under these conditions, opportunities to limit the escalation and, consequently, the scope of the conflict will present

themselves. This limit can be expressed in multiple ways, including irregular operations, the use of proxies, and a compromise (such as a negotiated or brokered settlement).

These points suggest the importance of establishing an escalation management plan prior to any interaction. Effective escalation management requires at least three factors: a credible and capable threat, an “off-ramp” to give an opponent a less costly but rational alternative to continued escalation, and the ability to communicate to adversaries in ways they will both understand and trust.

Limited Conflict and Quagmires

Under conditions for limited conflict, one risks the possibility they will evolve into quagmires or “frozen conflicts.” Quagmires happen when the cost of conflict is not worth the gain realized from winning, but the cost of withdrawal is higher than the cost of continuing to fight. Avoiding quagmires requires paying attention to both the costs and benefits associated with the conflict and external factors, such as domestic politics, decision-making biases, and differences in actors’ time horizons. Quagmires are more likely when actors external to the conflict support proxies as a means of indirectly confronting an adversary. Such relationships are attractive because external actors can pay a relatively low cost to engage an adversary, and proxies can manage risk by using irregular means focused more on imposing costs than occupying territory.

Application

Finally, this analysis applies the ROTs to US relations with China, Russia, and Iran. In its relations with China, the United States should cooperate when it is better off for doing so, but it should avoid becoming dependent on China the way Europe has been dependent on Russian energy. This dependency applies to both the US government and US corporations or other entities that can impact US strategic choices. This point does not mean that the United States should not cooperate or do business with China. It just means that it should ensure there are alternatives should such business or cooperation become disadvantageous. The United States also needs to address the credibility of its deterrent regarding China acting unilaterally to reunify with Taiwan if it hopes to have an effective deterrent. Fortunately, Russia’s current political isolation may have demonstrated to the Chinese that even if the United States does not commit military force, the United States and its partners can impose other costs that can impact China’s vital interests. Underscoring a commitment to impose similar costs should China invade Taiwan, especially in conjunction with other partners, may be one way to fill the credibility gap.

Russia’s invasion of Ukraine is a good example of actors acting irrationally or, at the very least, miscalculating costs and payoffs. Russia’s invasion also underscores the importance of timing, especially as it impacts the narrative. Though arming Ukraine before the Russian invasion may have improved Ukraine’s ability to defend itself, this act would have also played into the Russian narrative about NATO expansion, making Russia’s cause appear more legitimate than it is. Given an apparently enduring interest (on the part of Vladimir Putin, at least) to assert political control over the old Russian empire, maintaining Russia’s political and economic

sanctions for the foreseeable future will be important. Though Putin will likely not be able to do better than maintaining control over separatist regions in eastern Ukraine, if he is able to wait out the current international backlash, he will be incentivized to try again.

Little room exists for cooperation—or coercion, for that matter—in US-Iranian relations. Absent escalation to war, the United States cannot seemingly impose many more costs on Iran to get it to abandon its use of proxies to attack US and partner interests in the region. Even less chance exists of getting Iran to abandon its aims of pushing the United States out of the Middle East. Thus, the most rational course of action is to continue to impose costs to limit Iran's capabilities while being open to cooperation, no matter how small, as a way of lowering the stakes to make violence less urgent and nonviolent means more attractive. Given the likelihood of continued conflict and future escalation, the United States should also consider ways to establish escalation dominance and, failing that, identify off-ramps in advance. The United States should also encourage—but not intervene—in the ongoing meetings Iraq is hosting for Saudi Arabia and Iran; doing so would improve the parties' abilities to communicate and coordinate, which would set conditions for avoiding destructive prisoner's dilemmas in the future.

Conclusion

Following the withdrawal of US forces from Afghanistan, many have raised concerns the United States has lost its competitive edge and will soon be replaced as the global superpower by China with the help of Russia, both of whom will work with Iran to diminish, if not displace, US influence in the Middle East. In addition, these relationships may eventually displace US influence closer to home—for instance, in Central and South America. The preceding analysis should emphasize such an outcome is not inevitable. To the extent it can seize the initiative, the United States has political, economic, and military advantages against which adversaries cannot compete. Put simply, the United States remains a more attractive partner to most other states than any of its adversaries do. Leveraging this attraction effectively will require the communication of clear interests, the careful calibration of demands, and the fostering of relentless opportunism in the pursuit of advantage and the striking of the right balance between cooperation and confrontation.

Introduction: Compellence, Deterrence, and Coercion

At the time of this writing, China continues to frustrate US interests by provoking its neighbors while expanding its influence in Africa and South America in a larger effort to displace the United States. Elsewhere, the United States and its NATO allies failed to deter Russia's disastrous invasion of Ukraine, and Russia continues to use social media and other technology to interfere with the domestic cohesion of the United States as well as its external partnerships and alliances.¹ For its part, Iran has limited US influence in Iraq, Yemen, and the Levant by conducting a range of kinetic, cyber, and information operations against the United States and its regional partners.² Nevertheless, the United States can seemingly do little to reverse these developments, leaving it with a frustrating lack of control over the situation.

As Tami Davis Biddle points out, part of the problem is military practitioners often do not adequately distinguish between defeating enemies and coercing them. Whereas the former involves eliminating the enemy's ability to resist, the latter involves bargaining with the goal of gaining the enemy's cooperation. Bargaining suggests one must cede dominance and initiative to the other side as well as engage in unseemly manipulation to regain dominance and initiative should they be lost. Thus, Biddle argues, coercion works against military culture and identity.³ This contention may be true, but, perhaps more importantly, it works against the logic of military operations. As Biddle points out, military forces are designed to destroy enemy forces faster than the enemy can destroy its own. When no enemy military forces are left to destroy, military forces may still have utility, but the logic of employing them is less clear.

To illustrate the logic and grammar of coercion, this analysis relies on decision-theoretic methods such as game theory that emphasize decision-making processes and their associated logic as well as the attributes—rational or not—of the decisionmakers themselves.⁴ The intent here is not to offer predictive models of rational-actor behavior. Rather, the intent is to use game-theory and similar approaches to better understand the grammar of coercion better. Models are rarely accurate enough to make reliable predictions, and actors frequently are not rational. But, by understanding the underlying logic of how various actors, sometimes playing different roles, determine and act on preferences, one can generate general “rules of thumb” (ROTs) for using the tools of international competition.

1. Joe Biden, “Remarks by President Biden on America's Place in the World” (speech, Harry S. Truman Federal Building, Washington, DC, February 4, 2021).

2. Anthony H. Cordesman, Adam Mausner, and Aram Nerguizian, *US and Iranian Strategic Competition* (Washington, DC: Center for Strategic and International Studies, March 2012).

3. Tami Davis Biddle, “Coercion Theory: A Basic Introduction for Practitioners,” *Texas National Security Review* 3, no. 2 (Spring 2020): 95–96.

4. David Brulé and Alex Mintz, *Foreign Policy Decision Making: Evolution, Models, and Methods* (Storrs, CT, and Oxford, UK: International Studies Association and Oxford University Press, March 2010).

As Cold War scholar Thomas Schelling noted, coercion's logic is more about hurting than seizing. Coercion is the ability to get actors to do something they would not otherwise want to do.⁵ As Schelling argues, coercion comes in two forms: compellence and deterrence.⁶ Compellence refers to efforts to convince an adversary to act, whereas deterrence seeks to prevent an adversary from acting.⁷ Both feature in any competitive relationship.

Compellence and deterrence are related and often difficult to distinguish from each other. First, deterrence can look a lot like compellence. Threatening actors to deter them from challenging the status quo in effect compels them to accept it. To the extent the status quo works against the challengers' interests, such deterrence may be taken as an original provocation and, thus, an act of compellence. Second, compellent actions are often taken to enhance the defender's deterrent posture, especially in a crisis. For example, John F. Kennedy's blockade of Cuba during the Cuban missile crisis was both deterrent and compellent. Kennedy intended the blockade to both prevent more missiles from coming in and to demonstrate his seriousness about removing the missiles that were already in Cuba.⁸ As Schelling argues, the difference between deterrence and compellence lies in timing and initiative, which are determined by who makes the first move and whose initiative is tested.⁹

Though deterrence and compellence are two sides of the same coin, they have differences. Deterrence can be more a passive activity where compellence is more an active one. One establishes deterrence by establishing a line, committing to a response should that line be crossed, and waiting for someone to cross it. Compellence, on the other hand, involves moving first or at least committing to move first, forcing an adversary to concede or resist. As the blockade of Cuba demonstrated, not all deterrent activities are passive, nor are all compellent activities active. But even when a deterrent act is active, the intent behind it is to prevent further actions by an adversary. In this sense, deterrence is closely linked to defense. Conversely, even when passive, compellent measures are closely linked to offense because they are intended to compel an adversary's behavior.¹⁰

Another difference is whereas deterrence is open-ended, compellence has limits in both time and space. Deterrence seeks to prevent future acts; thus, it works if the adversary does nothing. Compellence, on the other hand, works only if the adversary does something. To be meaningful, the act must have both a deadline and limits to where and the extent to which compliance is demanded.¹¹ Perhaps more to the point, compellence typically takes on significance when

5. Robert J. Art and Kelly M. Greenhill, "Coercion: An Analytical Overview," in *Coercion: The Power to Hurt in International Politics*, ed. Kelly M. Greenhill and Peter Krause (Oxford, UK: Oxford University Press, 2018), 4.

6. David E. Johnson, Karl P. Mueller, and William H. Taft, *Conventional Coercion across the Spectrum of Operations: The Utility of US Military Forces in the Emerging Security Environment* (Santa Monica, CA: RAND Corporation, 2003).

7. Thomas C. Schelling, *Arms and Influence* (New Haven, CT: Yale University Press, 1966), 35.

8. Art and Greenhill, "Coercion," 6.

9. Schelling, *Arms and Influence*, 69–70.

10. Schelling, *Arms and Influence*, 71–79.

11. Schelling, *Arms and Influence*, 72.

deterrence fails. Kennedy's act of compellence was only necessary because the United States failed to deter the original provocation. Thus, the deterrent side of the coercion coin takes on greater significance. This point suggests any model of conflict should begin with an understanding of how deterrence works and the requirements for it to succeed.

Grammar of Coercion: Basics of Game Theory and Its Application to Coercion

As the Prussian General Carl von Clausewitz famously argued, war has “grammar of its own, but its logic is not particular to itself.”¹² Whereas the grammar applies to the means of war, the logic applies to the purpose of war. As Antulio Echevarria points out, grammar in this context refers to the principles, rules, or procedures that govern the use of force, and logic is expressed in terms of imperatives, principles, or customs governing political intercourse and, by extension, policy.¹³ Failing to align grammar and logic, Clausewitz argues, is much like not being conversant in a language and saying something that one does not intend to say.¹⁴

This section employs insights from game theory and other decision-theory tools to begin to describe the grammar of coercion. In language, grammar helps speakers to determine what they should say given what they want the words to mean. Grammar also helps speakers to make sense of what other speakers say to them. Some of these rules are practical, and actors should observe them because they facilitate success. Other rules are normative, and actors should observe them because, if nothing else, they facilitate more constructive outcomes. Practical rules reflect the nature of an activity, and normative ones reflect the type of constraints to which actors are willing to submit voluntarily.

Similar rules apply to coercive relationships. Often overlooked in international competition is actors on all sides must make the same choices about interests, goals, and priorities that others do. Using this observation to determine the best strategy when interests, goals, and priorities interact requires an adequate understanding of how the interaction will shape future choices. Describing this interaction begins with identifying who the relevant actors are, what their interests and goals are, what they can do in pursuit of the interests and goals, and what they know and believe about other actors—especially, how they might respond. These factors boil down to the preferences actors have for cooperation, concession, or conflict, regardless of the ways they manifest in each context. The purpose of this section is to identify and describe the elements of competitive interactions and how they relate to each other.

Since John von Neumann and Oskar Morgenstern wrote *Theory of Games and Economic Behavior*, game theory has been instrumental to understanding international competition.

12. Carl von Clausewitz, *On War*, ed. Anatol Rapoport (Middlesex, UK: Penguin Books, 1968), 402.

13. Antulio J. Echevarria II, “Reconsidering War’s Logic and Grammar,” *Infinity Journal* 2 (Spring 2011).

14. Clausewitz, *On War*, 406–7.

In this sense, “game” simply describes any situation in which the outcome depends on the choices two or more actors can make.¹⁵ More importantly, the choices depend on each other. Thus, what matters is the interaction among the actors’ decisions, not their decisions in isolation.¹⁶ In such interactions, actors choose among strategies that are intended to maximize payoffs that represent the values assigned to different outcomes.¹⁷

The difficulty with game theory is getting the model right. As Echevarria correctly observes, game theory, especially as Schelling employed it, is often “binary,” in that it infers preferences from the structure of the game itself and ignores other factors.¹⁸ This point is important: real-world interactions are complex, and ensuring one has accounted for all relevant factors is often difficult. Even if one could have such certainty, complex systems are sensitive to initial conditions and small changes that limit the application of game-theory models.¹⁹

Even if one were to overcome the issues associated with complexity, some elements of these interactions will never be available for analysis. For instance, even given rationally derived preferences, rational behavior is never guaranteed. In fact, cognitive processes and the limitations of the human mind make fully rational decision making possibly rare and often inscrutable. For example, a preference for consistency and simplicity as well as biases that affect how one weighs information introduce a great deal of room for error that will cause even a relatively accurate model to give bad results.²⁰

Taken together, these concerns limit the predictive capabilities of game-theory models. Yet such games can still have a prescriptive utility that manifests in two ways. First, to the extent a model can identify the most rational options, one can infer the adversary is at a disadvantage when it does not choose these options. Second, applying even informal models to competitive interactions can illuminate effective strategies and best practices that can enable better decision making.

Maximizing utility requires an approach that both organizes and disciplines how one thinks about strategic interactions and provides a logic that enables better decision making. Game theory is closely linked with, if not synonymous with, decision theory.²¹ As a result, the utility of game theory in application to international conflict depends on getting the relevant factors affecting one’s decision correct. David A. Lake and Robert Powell argue for a theory of

15. Frank Zagare, *Game Theory, Diplomatic History, and Security Studies* (Oxford, UK: Oxford University Press, 2019), 7.

16. David A. Lake and Robert Powell, eds. “International Relations: A Strategic Choice Approach,” in *Strategic Choice and International Relations* (Princeton, NJ: Princeton University Press, 1999), 4.

17. Philip D. Straffin, *Game Theory and Strategy* (Washington, DC: Mathematical Association of America, 1993), 3.

18. Antulio J. Echevarria II, *War’s Logic: Strategic Thought and the American Way of War* (Cambridge, UK: Cambridge University Press, 2021), 85.

19. Melanie Mitchell, *Complexity: A Guided Tour* (Oxford, UK: Oxford University Press, 2009), 20.

20. Janice Gross Stein, “Deterring Terrorism, Not Terrorists,” in *Deterring Terrorism: Theory and Practice*, ed. Andreas Wenger and Alex Wilner (Stanford, CA: Stanford University Press, 2012), 53–58.

21. Roger B. Myerson, *Game Theory: Analysis of Conflict* (Cambridge, MA: Harvard University Press, 1991), 5.

strategic decision making comprised of three components: focusing on the interaction as the unit of analysis; distinguishing between actors and their environments; and adopting a pragmatic approach that accounts for the specifics of the interaction in question.²² Thus, this approach seeks to identify equilibrium conditions where no actors benefit from changing their choices.

Focusing on interactions as the unit of analysis entails a further focus on actors, their preferences, and how these preferences affect each other. What matters for actors is how they rank possible outcomes and their beliefs about the preferences of opposing actors. But just because an actor prefers an outcome does not mean it is achievable. Thus, actors must further consider how the strategic environment imposes constraints on possible choices the actors and their adversaries can make as well as the informational structure that allows the actors to identify options and associate probabilities with various opponent behaviors. This disaggregation of actors into preferences and beliefs as well as environments into choices and information structures provides the primary variables for analysis. Other variables can matter, but they only matter to the extent they impact the primary ones.²³

The following discussion will employ the structure of game theory to illustrate the structure of interactions in international competition without relying too heavily on the mathematical detail often associated with game-theory analysis. Mathematical analysis is useful because it forces one to be rigorous in argument and precise in one's assumptions.²⁴ But this rigor and precision are not always germane to the practical decisions policymakers and military planners must make. The reasons actors could give for the strategies they adopt and the actions they take in pursuit of these strategies is germane. Based on this structure, one can derive general ROTs to guide decisionmakers as they navigate the complexity of interactions.

The Arms-Race Game

Consider, for instance, a simple arms-race game that is modeled after the well-known prisoner's dilemma.²⁵ Just as in the prisoner's dilemma, actors in an arms-race game can choose to cooperate—which, in this case, means the actors do not arm—or defect and arm, risking an arms race. The assumption is these actors are in a relationship in which to be armed better than the other confers an advantage that the other actor, assuming it is rational, will not tolerate.

Notably, this assumption raises three important points about the application of game theory. First is the role egoism and rationality play in decision making. Game theory assumes actors are both egoistic and rational. Actors are egoistic because they prioritize their interests over the interests of others. In this context, remembering “actors” refers to collectives, such as states and militant organizations, is important. Saying actors are egoistic is not the same as

22. Lake and Powell, “International Relations,” 4.

23. Lake and Powell, “International Relations,” 7–11.

24. James D. Morrow, *Game Theory for Political Scientists* (Princeton, NJ: Princeton University Press, 1994), 6.

25. Zagare, *Game Theory*, 9.

saying their leadership—or any individual—is egotistic, meaning they always prioritize their own self-interest. The leadership or certain individuals could be egotistic, suggesting an analysis of political personalities and their dynamics is always useful in determining strategy. But, for the purposes of this monograph, the assumption actors are egoistic simply means a collective's leadership will prioritize the collective's interests over others.

Actors are also rational in that, in any interaction, they seek to maximize their utility, however they may define it.²⁶ This notion of rationality says nothing about how actors define utility. Thus, nonrational influences from culture, history, personal interest, and domestic politics can affect how actors value certain outcomes in ways that are difficult to discern or predict. For example, political scientist Zheng Wang argues China's apparent overreaction to the visit by then-president of Taiwan Lee Teng-hui to his alma mater Cornell University in 1995 was driven in large part by a pervasive Chinese sense of national humiliation. In response to the visit, China recalled its ambassador, refused to accept the appointment of a new American ambassador, and conducted three large military exercises over the course of the next year.²⁷

The second point is in this context, cooperation and defection are somewhat ill-defined terms and do not fully account for the relational potential found in the interaction. When examining positive outcomes, distinguishing among harmony, coercion, and cooperation is useful. Harmony refers to instances in which adversaries reach an agreement without sacrificing any interests. Coercion occurs when actors surrender all or part of an interest and their opponent benefits. Splitting the difference, cooperation occurs when all actors in conflict make concessions to avoid escalation or another type of inferior outcome.²⁸ Thus, defecting is simply the refusal to harmonize or sacrifice any interest, despite the likelihood of escalation.

The third point is about the outcomes actors should seek given the actions other actors will likely take. Game theory is useful for identifying outcomes in which no actors gain any benefit from changing their strategies (which are referred to as equilibria). As mentioned earlier, actors may not like such equilibria. For example, in one version of the prisoner's dilemma, actors would rationally choose an outcome that resulted in their being given a light prison sentence, even though the game makes room for an outcome in which they both go free.²⁹ Such outcomes in which all actors do not rationally choose a different strategy are called "Nash equilibria," after John F. Nash, the Nobel Prize-winning economist who first described such interactions.³⁰

Returning to the arms-race game, seeing how such governance arises is not difficult. In this game, two actors must decide whether to seek military advantage over the other.

26. Zagare, *Game Theory*, 10.

27. Zheng Wang, *Never Forget National Humiliation: Historical Memory in Chinese Politics and Foreign Relations* (New York: Columbia University Press, 2012), 166.

28. Bruce Bueno de Mesquita and David Lalman, *War and Reason: Domestic and International Imperatives* (New Haven, CT: Yale University Press, 1992), 102.

29. Robert Axelrod, *The Evolution of Cooperation* (New York: Basic Books, 1984), 8–10.

30. Zagare, *Game Theory*, 11.

As mentioned above, their relationship is sufficiently adversarial that if one side gains an advantage, the other rationally seeks to restore parity, if not to pursue its own advantage. For the sake of simplicity, the actors' options for pursuing advantage are "arm" and "not arm."

What actors should choose depends on their beliefs about what another actor would do. The first step in understanding the choice an adversary might make is to establish how each actor values potential outcomes. In general, each actor would place a higher value on having advantage over having parity or disadvantage. This valuation is described in table 1.³¹

	State B Not Arm (C)	State B Arm (D)
State A Not Arm (C)	3,3 Arms Control	1,4 B Gains Advantage
State A Arm (D)	4,1 A Gains Advantage	2,2 Arms Race

Table 1. Arms-race game

If both decide to cooperate and not arm, then neither actor realizes its best outcome. But neither do the actors realize their worst outcome. Moreover, both actors realize a better outcome than if they had both defected and decided to arm. But paradoxically, defecting is the most rational action for both actors. This outcome results because no matter what outcome A selects, defection is rational for B. If A decides to cooperate, then B gains advantage by defecting. If A decides to defect, then B limits its costs by defecting. Having made this observation about B, A's only rational choice is to defect, even before B has made any choices of its own.

In this highly simplified model, actors are only able to make a choice once and are not able to coordinate their choices with the other actor. Still, this model captures some enduring aspects of international relations. For instance, in the early days of the Cold War, a lack of trust between the United States and the Soviet Union limited both the space for interaction and the ability to coordinate responses. Thus, an arms race ensued until the conditions changed.

As discussed, thinking of international engagement as a game entails relying on idealized descriptions of real-world engagements that, by necessity, leave out potentially important factors that should be brought to bear. Still, as Powell points out, the underlying causal structure of actors' decisions is generally relatively simple: The larger the threat, the greater the necessary counter.³² Thus, the resulting outcome will generally address mitigating a threat or strengthening potential counters. Both can be done by avoiding such limited interactions and, when avoidance

31. Zagare, *Game Theory*, 9.

32. Robert Powell, *In the Shadow of Power: States and Strategies in International Politics* (Princeton, NJ: Princeton University Press, 1999), 37.

is not possible, ensuring one is able to coordinate with adversaries. Ensuring the capability to coordinate, of course, can be a long-term effort. Often, the biggest barrier to effective coordination is the message being believed (a point that will be addressed later), not an ability to communicate. But the real-world lesson here is one should avoid such single-iteration interactions and actively work to ensure one can coordinate, even with one's adversaries, in times of crisis.

ROT 1: Avoid single-iteration interactions when possible; mitigate the potential for crisis by ensuring an ability to coordinate with an adversary in a way it can understand and trust

Iterative Arms-Race Games

This rule suggests ways to break out of the destructive cycle such dilemmas entail. As Robert Axelrod argues in *The Evolution of Cooperation*, when a successive interaction is possible, a different dominant strategy emerges.³³ Cooperation is rational for actors in this situation because actors know they will get another chance to play the game. If the other player defects, then they have the chance to defect as well in future iterations. Robert Keohane, in *After Hegemony*, argues this kind of iteration could serve as a basis for neoliberal institutionalism.³⁴

The best strategy under these conditions is to cooperate and, should the other player defect later, employ a tit-for-tat strategy in which one matches the adversary's response with a similar response.³⁵ One can see this dynamic reflected in the US-Iranian relationship. For example, in response to additional sanctions on its oil exports in the fall of 2019, Iran launched an attack on the Abqaiq oil refinery in Saudi Arabia as well as oil tankers elsewhere in the Persian Gulf. This attack effectively sent the message "If I can't sell my oil, neither can you."³⁶

In such repeated interactions, cooperation is sustained by the harm avoided, rather than by the benefits gained. Certainly, choosing to cooperate in the arms-race game is the most efficient option for both actors. But in adversarial relationships, one typically wins by taking advantage of the adversary's cooperation. Therefore, the only way to sustain cooperation over time entails an underlying infrastructure of threats that must impose sufficient costs to make adversaries worse off if they defect. Thus, though cooperation can be an equilibrium strategy, cooperation is only a sustainable equilibrium strategy if one has a credible and capable threat.

33. Axelrod, *Evolution of Cooperation*, 10–11.

34. Robert Keohane, *After Hegemony: Cooperation and Discord in the World Political Economy* (Princeton, NJ: Princeton University Press, 2005), 127; and Dr. Richard Jordan, e-mail message to author, August 11, 2021.

35. Axelrod, *Evolution of Cooperation*, 13.

36. C. Anthony Pfaff, "The Saudi-Oil Attacks Aren't Game Changing. They Show How the Game Has Changed," *Defense One* (website), September 17, 2019, <https://www.defenseone.com/ideas/2019/09/saudi-oil-attacks-arent-game-changing-they-show-how-game-has-changed/159947/>.

As will be discussed in more detail later, credibility is less about the perception of one's resolve as it is whether carrying out a particular threat is in one's interest. Capable threats both hurt adversaries and leave them worse off than if they had not acted.³⁷ Both are necessary, if not sufficient, conditions for coercive success. Adversaries may believe one would rationally make good on one's threat. But, depending on how the adversaries value the costs and benefits of the interaction, the adversaries may prefer conflict anyway.³⁸ Thus, the lesson here is not one should cooperate until an adversary defects and then respond in kind. Rather, the lesson is one should develop and sustain counterthreats capable of making adversaries worse off should they choose to defect.

ROT 2: Sustain cooperation by developing an underlying infrastructure of threats that would make one better off and one's adversaries worse off than they would be better off from benefits received as a result of defecting.

Consider table 2, which reflects the same payoffs as the arms-race game, in which the reward (r) for defecting while the other actor cooperates represents an individual player's most preferred outcome. An actor's least preferred outcome, of course, is to cooperate when the other defects (s). But, among rational players, the most preferred outcome is not likely to result because rational actors will not cooperate unless they believe the other actor's doing so is also rational. Given the severity of a conflict of interest (k), the temptation to defect increases from r to $r + k$, and the payoff for cooperation decreases from s to $s - k$, with a probability (p) that reflects how certain one is about the values an adversary would assign to the most preferred and least preferred outcomes. If the potential for a severe conflict of interest is sufficiently small, sustaining cooperation is possible because an equilibrium will be established in which the actors are incentivized to choose (c, c) in an iterated game. But if the probability for a conflict of interest, p , or the size of the conflict, k , is too large, then no cooperation will occur.³⁹ Tables 2 and 3 illustrate why this dynamic occurs.

	Actor B Cooperate	Actor B Defect
Actor A Cooperate	c, c	$s - pk, r + pk$
Actor A Defect	$r + pk, s - pk$	d, d

Table 2. Arms-race games and the effect of competitiveness

Here, (pK) is a way of describing degrees of competitiveness: Where both p and K are high, interactions will be highly competitive. One can thus manage this competition by signaling the likelihood one prefers conflict to impact the certainty the opponent has about one's preferences or lowering the stakes of the conflict itself to reduce the severity of any potential conflict.

37. Frank Zagare, *Games of July: Explaining the Great War* (Ann Arbor: University of Michigan Press, 2014), 43–49.

38. Zagare, *Game Theory*, 133–34.

39. Robert Powell, e-mail message to author, February 14, 2021.

	Actor B Cooperate	Actor B Defect
Actor A Cooperate	3,3	1-pk, 4+pk
Actor A Defect	4+pk, 1+pk	2,2

Table 3. High-stakes arms-race game

Obviously, the larger the probability and significance of a conflict of interest, the greater the incentive to defect. Without accounting for competitiveness, either actor should play a basic arms-race strategy: Cooperate when times are good, but should the other actor defect, then defect for all future iterations. But the greater the competitiveness (pk), the greater the gain from defecting first. Defecting comes at the cost of the other actor defecting for all future interactions. Yet if the initial gain is significant enough, then defecting and bearing the cost may be a worthy choice. One could imagine, for instance, a crisis over Taiwan reaching such significance the Chinese would be willing to forego future cooperation with the United States and take the island by force.

To fully determine whether the gain is valuable enough, one must also account for future payoffs being less valuable than present ones of equal worth. Typically, actors discount future payoffs because they prefer gains sooner rather than later, unless delays confer additional advantage. How much actors discount future gains is a function of three factors: the value of the gain, how much an actor would prefer the gain to happen sooner, and the probability future iterations will occur.⁴⁰ Thus, where the immediate gain is high and the value of future gains low, actors may be incentivized to defect, despite the prior benefits of cooperation. Taiwan may be a case in point. Given the Chinese government's strong preference for unification with Taiwan, should China conclude some act will make unification impossible—or, at least, unlikely—then China may act to reverse the situation (in effect, defect).

The lesson here is raising the stakes associated with a particular interest can make conflict more likely. Thus, actions that make future unification less likely—whether undertaken by the United States, Taiwan, or another actor—could cross a threshold that effectively forces the Chinese government to act. At some level, this insight might be counterintuitive. For example, though threatening to reverse the One China policy or giving Taiwan defense assurances should China decide to use force to settle the issue may seem to be reasonable deterrents to Chinese provocations, these responses are more likely to increase the chances of Chinese provocations.

ROT 3: Raising the stakes encourages opponents to defect first. Avoid strategies that raise the stakes associated with a particular conflict of interest unless escalation to conflict is preferable to the status quo.

40. Todd A. Sechser, "A Bargaining Theory of Coercion," in *Coercion*, 68.

One other assumption the arms-race game makes is actors know the preferences of other actors. In part, this certainty arises because actors know their relative payoffs and can project them onto others. Regardless of the value one assigns to an outcome, both winning and parity are preferable to losing, and gaining an advantage is preferable to parity. But given any particular interest, preferences may be hard to identify, and certainty may be difficult to obtain. For instance, Iran's employment of asymmetric measures can make its tolerance for escalation unclear. The costs Iran will bear or impose depending on how it chooses to retaliate are also unclear. As mentioned earlier, Iran responded to sanctions with drone attacks against oil infrastructure. Though this response was not exactly symmetric, it clearly represented the application of a tit-for-tat strategy given the options the Iranians had.⁴¹

Types of Actors

How an interaction unfolds depends on the preferences actors have, which determines the type of actors they are. Knowing an actor's type can thus provide useful insights into how one should respond to a challenge or make a challenge of one's own. As discussed earlier, actor preferences are a function of the costs and benefits the actors assign to particular outcomes. Based on these costs and benefits, actors who prefer conflict to cooperation or concession, for example, would be considered "hard." Actors for whom conflict would be their least preferred outcome would be considered "soft." For the former, employing a coercive threat is rational; for the latter, it is not.⁴²

Thus, how challengers assess defender type affects the kind of demand they make as well as their chances for success. In the simple interaction described by the arms-race game, a coercer might make two equilibrium demands: If the target is hard, the coercer will want to make a lower demand; if a target is soft, the coercer will want to make a higher demand. This point is obvious enough. Coercers typically do not want to demand so much both harder and softer opponents choose conflict. Thus, coercers must select between the low end, where the probability of their prevailing in conflict plus the cost incurred by the opponent for conceding is greater than the value of what is demanded, and the high end, where weak opponents will likely concede because they believe the cost of conflict is greater than the cost of concession.

Typing actors this way allows one to accommodate the complexity of real-world relationships without overcomplicating decisions on how to manage the relationships. Because preferences both are a function of benefit and include factors associated with history, culture, and psychology, one should take these kinds of factors into account when discerning an adversary's type.

41. Thomas S. Warrick, "If the US Launches Cyberattacks on Iran, Retaliation Could Be a Surprise," C4ISRNET (website), January 30, 2020, <https://www.c4isrnet.com/thought-leadership/2020/01/30/if-the-us-launches-cyberattacks-on-iran-retaliation-could-be-a-surprise/>.

42. Stephen L. Quackenbush, *Understanding General Deterrence: Theory and Applications* (New York: Palgrave, 2011), 43.

ROT 4: Coercers should avoid excessive demands unless they are part of an effort to reduce uncertainty about adversaries' preferences. The target should signal resolve and, if necessary, accept short-term loss to minimize losses over the long term.

Understanding Preferences

If actors' types are determined by their preferences, then the next step is to examine more closely the factors that inform these preferences. Although game-theory models tend to take actor preferences as fixed, in the real world, actor preferences are often not fixed.⁴³ Thus, accounting for preference shifts is a critical task for effective competition, and, when accomplished, requires new analysis. Within the structure of the interaction, the value of the interest at stake or the size of the demand one actor makes on the other should be considered first. Second, in seeking to realize interests and demands, actors pay a cost relative to the means used. In this context, cost has both tangible and intangible aspects. For instance, the use of force costs actors ordnance, equipment, and combatants. Nonmilitary means, such as economic sanctions, also come with costs in terms of enforcement and any trade lost because of the sanctions.⁴⁴

Third, and external to the interaction, political costs associated with the use of a particular means relative to a particular interest represent a less tangible cost. These sorts of calculations can be complex. For example, the domestic political cost for employing sanctions as opposed to force could be higher if the former is viewed as a weak method.⁴⁵ On the other hand, one might bear reputational costs if allies and partners feel resorting to force was hasty or disproportionate. Furthermore, the gains and costs can change with each iteration, a phenomenon iterative models sometimes obscure.⁴⁶

As mentioned previously, political costs are informed by several additional factors, including history, culture, social values, and norms that apply, *sui generis*, to the relationship in question. For instance, China's sensitivity to its history of "national humiliation" likely affects how the country views the costs of cooperating and defection in ways that do not apply to other adversaries.⁴⁷

The complexity of accounting for a variety of tangible and intangible factors further reinforces the idea uncertainty about an adversary's behavior is irreducible and cannot be captured by any model. But one can still gain a better understanding of the factors that inform the adversary's preferences and how they are weighted. In addition, under certain circumstances, uncertainty on the adversary's part about one's preferences can work to one's advantage.

43. Richard Jordan, e-mail message to author, August 11, 2021.

44. Quackenbush, *General Deterrence*, 55.

45. Quackenbush, *General Deterrence*, 55–56.

46. Robert Powell, "Absolute and Relative Gains in International Relations Theory," *American Political Science Review* 85, no. 4 (December 1991): 1309.

47. Zheng Wang, *Never Forget*, 132.

Asymmetric Stakes

As noted, costs and benefits are not always symmetric among competing actors. In many cases, one side has more at stake than another relative to a particular interest. For example, from the Iranian perspective, its ballistic missile program and sponsorship of proxy organizations are its primary means of defending itself. For the United States, Iran is another regional competitor that can impose costs but cannot inflict the kind of hurt the former can (and has) on the latter. Thus, although the American gain from Iran's cooperation may be similar to that in the standard arms-race game, Iran always stands to gain more from defecting and to lose more from cooperating than the United States does. Table 4 contains a matrix that illustrates this imbalance. In this model, even though the United States stands to gain from some level of cooperation, Iran's incentive to defect will incentivize a tit-for-tat exchange as both sides try to impose costs for the other's defection.

	US Cooperate	US Defect
Iran Cooperate	3,3	4,1
Iran Defect	5,1	3,2

Table 4. Asymmetric interaction payoffs

ROT 5: Account for asymmetries in outcome values when determining whether and what kind of costs to impose. Where a significant gap exists, the chances for cooperation are limited because the actor with the higher stake is incentivized to resist, and the actor with the lower stake is not incentivized to take risks or employ costly measures.

Dealing with Uncertainty

As mentioned earlier, uncertainty plays a key role in coercive success—both in terms of resolving uncertainty as well as creating it. Uncertainty, of course, admits of degrees; thus, to get a handle on how to address it, this discussion begins at one extreme: decision making under conditions of complete uncertainty. In this interaction, one effectively eliminates payoffs for the other actor because they are unknown. Table 5 illustrates an interaction in which A has four actions it could take that are exclusive in that to choose one is to refrain from choosing the others.⁴⁸ In this interaction, B knows what these actions are and has four possible and equally exclusive responses. Under these conditions, the only option for B to consider is its own outcomes given the interaction of its possible choices with A. Thus, table 5 represents the payoffs for an actor given what the other actor could do.

48. Straffin, *Game Theory*, 56.

		A			
		A	B	C	D
B	W	2	2	0	1
	X	1	1	1	1
	Y	0	4	0	0
	Z	1	3	0	0

Table 5. Conditions of complete uncertainty

One response for B would be to consider each outcome equally likely. In this case, B would simply sum up the values for each row and choose the action with the row with the highest value. In this case, the row with the highest value is W because the row adds up to five and the others add up to four. Alternatively, B could choose a maximin strategy, which would involve identifying the row with the highest minimum—in this case, X, because its lowest minimum is one and the lowest minimum of the other rows is zero. The strategy B chooses depends largely on personality—or, at least, the choice depends on factors that say more about the kind of actor B is than they do about B's situation. If B is optimistic, it will choose the first “maximax” option, which identifies the highest payoff with the highest probability of happening. If B is cautious, it will choose the second maximin strategy because it yields the best chance of avoiding the worst outcome.⁴⁹

Optimism also admits of degrees, so B could choose a mixed approach and assign a “coefficient of optimism” that reflects B's assessment of either obtaining a positive outcome or absorbing a negative one. For instance, B would assign a higher value to the coefficient if B believed, given any choice A might make, A would make a choice favorable to B. If A did not choose favorably, then the cost to B of the choice it made would be relatively low. Given this coefficient represents a probability, its value would be between zero and one and would be applied to the highest and lowest values in each row. For example, if B assigned a coefficient of 0.75, the results for each row would be 1.5, 1.0, 3.0, 2.25. Thus, Y would be the best choice. Finally, B could choose a minimax approach that minimizes the amount of regret B might experience given A's choice. This minimization would be achieved by selecting the row that has the smallest maximum payoff—in this case, Z.⁵⁰

Each approach recommends a different choice, which raises the question: How should one choose among approaches? Here, rationality, as employed in this discussion, dissolves. Rational choices depend on being able to establish the utility associated with each outcome and the probability each outcome will occur. If one does not have adequate knowledge of potential outcomes or their probabilities, then, as illustrated earlier, one cannot proceed rationally.

49. Straffin, *Game Theory*, 57.

50. Straffin, *Game Theory*, 58.

Thus, whether to be optimistic or pessimistic falls outside any analysis decision theory can provide and is thus a matter of judgment.

Nevertheless, proceeding methodically is still possible. As discussed earlier, the choice of whether to be optimistic is informed by factors external to the game and peculiar to each situation and the relevant actors. In identifying these factors, actors should also assess the level of risk they are willing to accept given their limited knowledge of possible outcomes.⁵¹

ROT 6: Under conditions of complete uncertainty, actors' choices are a function of the values they assign to particular outcomes as well as the actors' tolerance for risk. If the value were low or the risk tolerance high, then acting would be more rational than if the value were high and the risk tolerance low. When determining value and risk tolerance, one should consider whether maximizing benefit or minimizing regret is better.

As Daniel Kahneman and Amos Tversky point out, under conditions of uncertainty, decisionmakers can be especially prone to cognitive biases. These biases include optimistic overconfidence, the certainty effect, and loss aversion. In conflict situations, optimistic overconfidence happens when actors assign a higher probability to their preferred outcome, despite knowing they have incomplete evidence on the other side. Often, in these conditions, actors will assign less initiative and imagination to an opponent and, consequently, overestimate their chances for success.⁵²

The certainty effect occurs when actors give greater weight to probabilities on the margins than probabilities in the middle. Changes in probability from impossibility to possibility or near-certainty to certainty loom larger than probability changes in the middle range. Thus, actors prefer to act to obtain a benefit when the probability changes from 0.99 to 1.0 rather than 0.80 to 0.85, despite the significant increase the latter change represents. To avoid harm, actors prefer to act when the probability changes from, for instance, 0.0005 to 0.0 rather than 0.0015 to 0.0005. These results run counter to rational choice theory, which says probability changes should have the same weight, regardless of where in the range they occur. As Kahneman and Tversky further point out, this effect can be exacerbated under conditions of vagueness and ambiguity.⁵³

Loss aversion occurs when actors give greater weight to avoiding loss than to attaining gains, making actors reluctant to accept even-chance gambles unless payoffs are very high. Studies show many will not act on such probabilities unless the gain is at least twice as large as the potential loss.⁵⁴ The implications of these biases in the context of state-actor choices in which multiple individual choices can determine a state's actions are unclear. But the results of Vladimir Putin's invasion of Ukraine suggest optimistic overconfidence may have played a role

51. Jordan, e-mail message to author.

52. Daniel Kahneman and Amos Tversky, "Conflict Resolution: A Cognitive Perspective," in *Barriers to Conflict Resolution*, ed. Kenneth Arrow et al. (New York: W. W. Norton & Company, 1995), 46–48.

53. Kahneman and Tversky, "Conflict Resolution," 50–52.

54. Kahneman and Tversky, "Conflict Resolution," 54.

in the decision to invade.⁵⁵ Regardless of whether overconfidence played a role, the existence of these biases suggests one should be self-aware enough to avoid them as well as prepared to identify and take advantage of them when they are perceived in others.

Incomplete Information and Thresholds for Acting

Though having complete information is rare, so is being completely ignorant. Incomplete information entails knowing what one does not know and being able to assign probabilities to adversaries' choices according to what one does know. The relationships and engagements under discussion here have a history from which actors can discern patterns to adversaries' responses. Moreover, international actors—both state and nonstate—invest in intelligence capabilities so they can better predict their adversaries' moves. Further, one generally has an idea of the factors adversaries must take into account when deciding whether to act. For example, if an adversary considers a military option, one generally knows the circumstances under which the adversary would deem the option credible and capable.

Thus, most adversarial interactions are conducted under conditions of incomplete information. Under these conditions, a rational actor should adopt a strategy that maximizes each actor's payoffs given the actor's beliefs about the other actor.⁵⁶ Under these conditions, equilibria are known as "Bayesian Nash equilibria." Bayesian analysis assesses the probability of something given the probability of something else.⁵⁷ For instance, one can assess the probability of a Chinese invasion of Taiwan as being higher given a US offer of defense guarantees. But one must also assess the probability of the offer given it could lead to invasion. If no offer exists, then the probability is lower. Other factors can influence a Chinese decision to invade. Thus, to form a more complete assessment, one would have to take all of these probabilities into account if one wanted to get a better sense of the likelihood China will act.

As James D. Morrow observes, Bayesian equilibria cannot be calculated easily. This difficulty especially applies to real-world interactions, which are not easily quantifiable. To assign probabilities to actor choices, Morrow recommends thinking about how the game should be played, formulating possible equilibria, and checking to see which possible strategies are optimal given one's original beliefs about a situation as well as any updates to these beliefs based on other players' possible moves to assign probabilities to actor choices.⁵⁸

55. Henry Foy et al., "Russia's Bid for Rapid Victory Faces Forceful Response," *Financial Times* (website), February 26, 2022, <https://www.ft.com/content/e814d702-58e2-4df0-b606-e843fce90866>.

56. Zagare, *Game Theory*, 19.

57. Tom Tymoczko and Jim Henle, *Sweet Reason: A Field Guide to Modern Logic* (New York: W. H. Freeman and Co., 1995), 355.

58. Morrow, *Game Theory*, 176.

In the context of international engagement, one first calculates the probability of outcomes given the probability of an actor's strategic choice. Previously, this discussion noted conditions in which uncertainty could preclude cooperation, depending on the value of the interest at stake. But probabilities associated with these uncertainties are also useful for identifying an adversary's or one's own threshold for acting. Given the probability actor A assigns to actor B's type (hard or soft), actor A's threshold for action is a function of this probability and actor A's value of the Bayesian Nash equilibria, where both actors defect, plus the probability actor A is wrong about actor B's type and A's best outcome, in which actor A defects while actor B cooperates. In this case, B is more likely to be hard when the value (p_B) increases because the payoffs described in the arms-race game assume conflict is preferable to losing.

Table 6 depicts a standard arms-race game and its payoffs.

	B Cooperate	B Defect
A Cooperate	3,3	1,4
A Defect	4,1	2,2

Table 6. Standard arms-race game with payoffs

From A's perspective, one would incorporate the probability B is hard by multiplying it by (d,d), which is the outcome in which both defect. Conversely, A can multiply the probability B is soft by (d,c), which is A's best outcome, as illustrated in table 7. In the latter case, p_B is the probability B is hard, $1-p_B$ is the probability B is soft, and U is the utility of defecting.

	B Cooperate	B Defect
A Cooperate	3,3	1,4
A Defect	$4,1(1-p_B) = U(d,c)$	$2,2(p_B) + U(d,d)$

Table 7. Standard arms race under conditions of uncertainty

If this interaction is iterative and actors have previously cooperated, (c,c), the dominant strategy is to continue cooperation until the other actor defects. The question is, then, under what conditions would a rational actor defect? This point is where uncertainty about actor type can affect the game's equilibria. If A has reason to question B's resolve, then those payoffs could change, and A's defection could be rational, resulting in deterrent failure for B and coercive success for A (if B also does not defect). If A assesses a high probability B is hard (0.9), then the rational act is to continue cooperation. As shown in table 8, the high probability B is hard preserves its preference for conflict (d,d) over that of A's interest in gaining advantage because despite the uncertainty, B's payoff remains higher if it defects. Notably, (p_B) only applies to A's preferences because B presumably knows its own type.

	B Cooperate	B Defect
A Cooperate	3,3	1,4
A Defect	4,1 (.1) = .4	2,2 (.9) = 1.8

Table 8. Utility for acting given type (B hard)

One way to understand the matrix above is given the high probability B is hard, the utility in defecting is low. But if B being hard is highly probable, this calculation changes. As illustrated in table 9, if B has a high likelihood of being soft, then the potential for the higher payoff remains higher than that of the status quo, and the risk of B defecting is almost negligible.

	B Cooperate	B Defect
A Cooperate	3,3	1,4
A Defect	4,1 (.9) = 3.6	2,2 (.1) = .2

Table 9. Utility for acting given type (B soft)

These tables show if A defects, it will receive the payoff (d,d) with the probability B is hard and the payoff (d,c) with the probability B is soft. The higher the likelihood B is soft, the higher the utility of defecting. If A chooses to cooperate, it will receive the status quo (sq) payoff with certainty. The only reason A should choose to defect is if the expected utility from defecting exceeds that of continued cooperation. Given the payoffs described earlier, the probability B is hard multiplied by (d,d) plus the probability B is soft multiplied by (d,c) would have to be greater than three.

Thus, the probability B is hard would have to be less than the difference between (d,c) and the status quo over the difference between (d,c) and (d,d). This relationship can be represented mathematically as $pB < ((d,c)-(sq))/((d,c)-(d,d))$. The value of the right side of the preceding inequality is the threshold for A defecting. If (pB) is greater, then A should cooperate. If (pB) is less, then A should defect. In the case of the payoffs described earlier, the value of the right side is 0.5. Thus, if A assesses (pB) to be less than 0.5, deterrence holds; if A assesses (pB) to be greater than 0.5, deterrence fails.⁵⁹ Here, whether one can assign a specific threshold for action does not matter. But knowing whether an actor has a high, medium, or low threshold can indicate the kinds of measures one can take to influence the threshold. Thus, the probability actors will prefer confrontation depends on how much more they value a particular interest over the status quo given their assessment of the probability of and the extent to which they will incur the costs necessary to achieve confrontation.

This analysis also suggests the utility of increasing uncertainty in specific situations. Although credible and capable threats are critical to coercive success they often will not succeed

59. Zagare, *Game Theory*, 21–23.

when confronted by a hard adversary. Thus, injecting some uncertainty about one's own type can raise the adversary's threshold for acting. But doing so needs to be carefully calibrated. Coercion can fail if adversaries conclude one is softer than originally perceived. Thus, injecting uncertainty is not necessarily about portraying oneself as something one is not; rather, injecting uncertainty is about getting the adversary to question what it understands and believes about the situation, thus raising the adversary's cost to act.

ROT 7: Raising an adversary's threshold for action increases the likelihood one can preserve the status quo. Raising this threshold can be accomplished by signaling resolve, lowering the gains of defecting, or raising the benefit of cooperating.

Conclusion

This section provided a basic grammar of interactions with adversaries. This grammar includes the elements of these interactions—actors, preferences, and types—as well as some basic ROTs that govern the interactions. These rules suggest the chances of coercive success increase when adversaries have reasonably good lines of communication and a level of trust that depends—in part, at least—on a good understanding of adversaries' views of their interests. On the other hand, coercive success can be undermined when one side raises the stakes to the point defection becomes an attractive option, despite the long-term costs. Of course, in real-world interactions, typically one or both sides make demands, and raising the stakes becomes inevitable. Therefore, one must further consider where the threshold lies given uncertainty or incomplete information about an adversary's preferences. With these basics in mind, the next section examines more complex interactions.

Incorporating Fluency into Game Theory to Develop a More Complex Grammar of Coercion

This section builds on the structure discussed in the previous section and applies the structure to more complex situations. Specifically, this section largely draws on “perfect deterrence theory,” as developed by Frank C. Zagare and D. Marc Kilgour, to illustrate common coercive interactions involving ultimatums, mutual and unilateral deterrence, escalation, and partners. As applied here, perfect deterrence theory replaces classical theories of coercion to provide a nonbinary approach to decision making in conflict.

Compellence

Intuitively, the stronger actors are relative to their adversaries, the more likely they will have coercive success. But the logic of these interactions suggests otherwise. As mentioned earlier,

Schelling views coercion as a kind of bargaining.⁶⁰ One wants the other actor to accept one's demands, which can only happen if the other actor believes doing so is rational. Thus, if one's demand is too high relative to the costs the other actor must bear to meet it, the other actor choosing to do so is unlikely. Consider, for example, a used car purchase. If the dealer asks too high a price relative to the price the customer is willing to pay, the customer is very likely to decline the purchase. Therefore, the smart dealer will ask for a price that will engage the customer in the bargaining process, even if the dealer must initiate a few additional rounds of negotiations to reach a mutually acceptable outcome.

In the kind of adversarial competition under discussion here, compellence typically begins with one actor demanding something from another and threatening a punishment should the other actor not concede.⁶¹ These interactions are “zero-sum,” meaning a gain for the compeller represents a loss for the target and vice versa. In such interactions, compellers make a demand to which their targets rationally must respond. Simply put, a compeller (A) who has a demand to make may either choose to make the demand or not, and the target of the demand (B) may either choose to concede or refuse, the latter of which will result in conflict. See figure 1 for a visual representation of ultimatums.

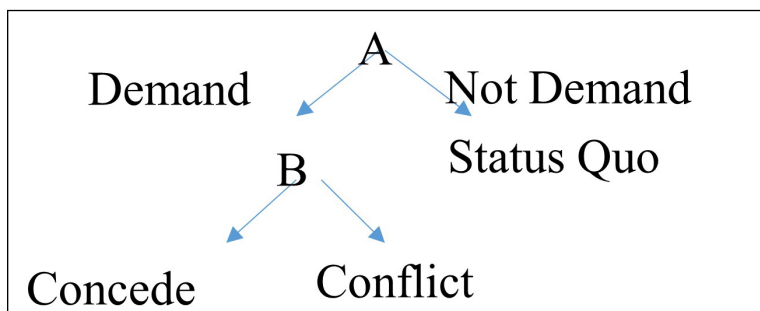


Figure 1. Ultimatums

As discussed earlier, when a coercer makes a demand of a target, the former will make the highest demand the former believes the latter will accept. The likelihood of this acceptance is a function of the value of the demand, the probability the coercer would win if the interaction resulted in conflict, and the cost to either actor for engaging in military conflict.⁶² The logic here is relatively straightforward. The value of the demand impacts actor payoffs. If the value of the demand is high for the coercer, then, in a symmetric, zero-sum game, the concession will impose a high cost on the target. If the coercer knows the costs for the target, the coercer should be successful. This advantage occurs because the coercer can calibrate the demand to be equal to or less than the likelihood of the coercer winning plus the cost the target will bear for fighting. Thus, if the value of the demand is equal to or less than the probability of the compeller winning plus the cost incurred by the target for conceding, the coercion will succeed.⁶³

60. Schelling, *Arms and Influence*, 4.

61. Sechser, “Bargaining Theory,” 61.

62. Sechser, “Bargaining Theory,” 63.

63. Sechser, “Bargaining Theory,” 63.

Here, success depends on getting the threshold right. As Len Fisher observes, such interactions have a basic “take it or leave it” structure wherein the target of the ultimatum is forced to choose between a low payoff, no payoff, or a potential cost. The rational action is to take the low payoff or to avoid the highest cost. But, as Fisher notes, interestingly, such interactions often bring out the irrational side of actors. For instance, in one oft-repeated experiment, an actor offers another a sum of money on the condition the latter shares a portion of the money with a third actor. If the third actor rejects its portion, then no one gets any money. Despite this conditionality, rationally, the third actor should take the amount the second actor has offered, incentivizing the latter to provide as little money as possible. When this game is played in real life, most players reject an offer that represents less than 30 percent of the total.⁶⁴ Although human psychology undoubtedly contributes to these results, one can also infer placing others in situations in which the outcome may be optimal but unfair alters how the others view the interaction. In this case, at least, being unfair comes at a cost of its own.

The possibility of future iterations also impacts the interaction in interesting ways. First, the possibility of future iterations offers the coercer the opportunity to assess the actor type of its opponents—especially their sensitivity to the human and financial costs of war.⁶⁵ Such separating strategies require the coercer to calibrate the demand so strong actors defect and weak actors concede. Though calibrating encourages coercers to open with higher demands, and thus risks a greater chance for failure, doing so can lead to bigger payoffs in subsequent rounds. Moreover, very strong actors may be incentivized to take bigger risks because the actors can better afford failure.

Second, the likelihood of future interactions can make weaker actors more resistant to conceding, even if doing so were rational in the present. Given a capable threat, conceding in a single-iteration interaction is always rational. But, in Robert J. Art and Kelly M. Greenhill’s “capability-intention dilemma,” capability can be undermined if the target believes its adversary will continue to make demands. Indeed, weaker actors are incentivized to appear hard up front to cause stronger coercers to moderate their demands.⁶⁶ This dynamic can significantly increase the perceived cost of cooperation, making concession by the target less likely.

Thus, the stronger the coercing actor, the more chances of coercive failure. Moreover, the more resolved the target of coercion, the more likely coercive success. These results may appear counterintuitive. In the former case, stronger actors are more likely to risk failure up front to obtain higher payoffs in future iterations. In the case of the latter, more resolved targets incentivize coercers to calibrate their demands more effectively, offering something more acceptable to the target.⁶⁷

64. Len Fisher, *Rock, Paper, Scissors: Game Theory in Everyday Life* (New York: Basic Books, 2008), 122–24.

65. Todd S. Sechser, “Reputations and Signaling in Coercive Bargaining,” *Journal of Conflict Resolution* 62, no. 2 (2016): 321.

66. Art and Greenhill, “Coercion,” 18–19; and Sechser, “Bargaining Theory,” 69–70.

67. Sechser, “Bargaining Theory,” 73.

Deterrence

Deterrence depends largely on one's ability to signal a capable, credible threat to maintain a status quo. According to classical deterrence theories, such as those described by Schelling, a status quo supporting equilibrium is found in a balance of power: If one side tries to gain an advantage, the only rational move for the other side is to compensate. To maintain the status quo, one must be able to impose a cost greater than any advantage an adversary might gain by upsetting the status quo. But imposing such a cost can seem paradoxical. Upsetting the balance of power entails an adversary gaining an advantage that offsets one's own. If one had the capability to offset an adversary's newly acquired advantage, then, arguably, one had a prior advantage to the adversary and is thus responsible for originally upsetting the balance.

The introduction of nuclear weapons had precisely this effect during the Cold War. Under the nuclear threshold, the United States and the Soviet Union risked an escalatory crisis whenever they sought nonnuclear advantage. Schelling described this interaction as a game of "chicken," much like teenagers racing their cars into a head-on collision unless one swerves away in time.⁶⁸

Classical Deterrence Theory

Despite its binary character, "chicken" has often been used to model escalatory interactions, such as the outbreak of World War I and the Cuban missile crisis. Chicken resembles the arms-race game in that the former consists of two or more actors who each have two possible strategies: cooperate or defect. Chicken differs from the arms-race game in that the former assumes though both actors prefer to win, conflict is their worst outcome, making losing the second-worst outcome.⁶⁹ To break the escalatory cycle, either actor can "irrevocably commit" to escalation, which would force a rational opponent to cooperate or concede.⁷⁰

Because trusting signals from an adversary can be irrational, communicating an irrevocable commitment can be problematic. Schelling offers a possible way out of this difficulty: One could "leave something to chance" and offer a deterrent threat that raises the chances—rather than the certainty—of escalation. Rather than going to war, which would be irrational, an actor can threaten to raise tensions and leave escalation to chance. In this case, successful deterrence is not based on the costs one threatens to impose because they are already assumed to be intolerably high. Rather, successful deterrence is based on convincing an opponent one has a higher tolerance for risk, essentially transforming the effort to signal a capable, credible deterrent threat into a risk-taking competition.⁷¹

68. Schelling, *Arms and Influence*, 116–25.

69. Zagare, *Game Theory*, 63.

70. Quackenbush, *General Deterrence*, 7.

71. Zagare, *Game Theory*, 63.

Setting aside real-world concerns about how to calculate risk and signal one's willingness to accept the risk, the problem with this sort of brinkmanship is it suffers from the same kind of credibility issues threatening nuclear war does.⁷² For example, Russia and the United States have adopted first-use policies for their nuclear weapons as a means to prevent disputes from escalating into attacks.⁷³ But, because first use invites escalation—which is the worst case for both actors—threatening it is no more rational than employing it. This scenario is referred to as “the mutual deterrence paradox.”

Because deterrence depends on changes to the costs of conflict, classical deterrence theory closely links the probability of deterrent success with increases in military capability. Thus, because players always prefer to seek military advantage as well as to back down rather than to escalate to war, classical deterrence recommends an overmatch capability that ensures any efforts by an opponent to reduce the threat one's deterrent poses will not be effective, also ensuring the cost of any conflict will be intolerably high. In times of crisis, classical deterrence theory favors coercive negotiation strategies that communicate an irrevocable commitment or raise the cost of conflict.⁷⁴ Classical deterrence theory also recommends feigning irrationality if necessary to convince an opponent one will carry out the deterrent threat.⁷⁵

As evidenced by the use of nuclear weapons to limit escalation, the problem with classical deterrence is it rests on a logical inconsistency. Both actors' deterrent threats rest on conflict being the other's worst outcome. If these conditions are true on both sides, then neither side can make a credible threat because doing so would represent an escalation to conflict. To be deterred, each actor must see the other's threat as credible. In other words, actors can only be rational when they are deterred, but they are irrational when they deter.⁷⁶ Because engaging in deterrent measures is necessary for successful deterrence, classical deterrence theory cannot explain why deterrence succeeds or fails; the theory's only explanation is error on the part of an actor.

If classical deterrence theory were right, then World War I should not have happened. Moreover, a third world war should have occurred. Actors in World War I correctly saw conflict was their worst option, but they escalated anyway. Moreover, this escalation was not the result of a misjudgment. Rather, all major actors acted as the theory required: rationally and egoistically.⁷⁷ Furthermore, when the United States had nuclear superiority over the Soviet Union, the theory predicts the former should have been more aggressive, making escalation more likely. Indeed, when the Soviet Union reached nuclear parity in 1978, US strategists became

72. Quackenbush, *General Deterrence*, 8.

73. Jason P. Clark and C. Anthony Pfaff, *Striking the Balance: US Army Force Posture in Europe, 2028* (Carlisle, PA: Strategic Studies Institute, US Army War College Press, 2020), 22–23, <https://press.armywarcollege.edu/monographs/911/>.

74. Zagare, *Game Theory*, 140.

75. Zagare, *Games of July*, 31.

76. Zagare, *Game Theory*, 127–29; and Zagare, *Games of July*, 43.

77. Zagare, *Games of July*, 33.

concerned the Soviets would be more aggressive because they also had conventional overmatch.⁷⁸ But neither happened, suggesting the theory is flawed.

Perfect Deterrence Theory

Perfect deterrence theory is named as such because it only considers equilibria where both actors' choices are rational, unlike classic deterrence theory, in which equilibria can be reached when actors do not choose rationally.⁷⁹ Perfect deterrence theory assumes, perhaps unsurprisingly, actors prefer winning to losing at the lowest possible cost. But because the theory does not assume a fixed cost, actors can be differentiated where conflict may not always be their worst outcome.⁸⁰

Thus, this approach recognizes credibility, which is determined by an actor's preference between conflict and concession, varies.⁸¹ One can better understand perfect deterrence theory's implication for policies associated with conflict through the application of four kinds of interactions associated with international conflict and competition: mutual deterrence, unilateral deterrence, tripartite crisis, and asymmetric escalation.

Mutual Deterrence

Mutual deterrence has essentially the same structure as an arms race. Here, both actors are challengers in a two-way relationship.⁸² Under complete information for both sides, if one actor prefers concession to conflict, then the other actor has no reason to believe the former will carry out its threat; as a result, the threat is not credible. If actors prefer conflict to concession, then their threat is credible and the other actor, knowing this fact, is deterred. Thus, rather than cooperation arising out of multiple iterations, it arises due to credible and capable threats.⁸³

Therefore, survival of the status quo depends on both actors possessing highly credible and capable threats. The logic of mutual deterrence is straightforward: Actors must persuade each other of three things. First, each actor has an effective military capability. Second, the actors could use the capability to impose costs an attacker would find unacceptable. Third, if attacked, the actors would carry out the threat.⁸⁴ Unlike in classical deterrence theory, more capability does not entail greater deterrence. For instance, when an actor for whom conflict is the worst outcome interacts with a player for whom conflict is preferable to losing, then increasing military capability beyond the requirements of deterrence can lead to failed deterrence. This failure

78. Rebecca Grant, "The Second Offset," *Air Force Magazine* 99, no. 7 (July 2016): 33.

79. Frank C. Zagare and D. Marc Kilgour, *Perfect Deterrence* (Cambridge, UK: Cambridge University Press, 2000), 289.

80. Zagare, *Game Theory*, 130–31.

81. Stephen L. Quackenbush, "Deterrence Theory: Where Do We Stand?," *Review of International Studies* 37, no. 2 (April 2011): 746–47.

82. Zagare, *Game Theory*, 130.

83. Quackenbush, "Deterrence Theory," 746.

84. Quackenbush, "Deterrence Theory," 742.

occurs because the second actor will rationally interpret the first actor's threat as noncredible. Because the second actor prefers conflict to losing, the actor rationally responds to any subsequent imbalances that make losing more likely.⁸⁵

Another characteristic of mutual deterrence is the survival of the status quo depends on how highly actors value it. Even if both actors do not prefer the status quo relative to their own alternatives, it may still be preferable to the consequences of challenging it. As Zagare points out, though this observation may seem obvious, it is largely ignored in classical deterrence theory, which dismisses the importance of diplomatic initiatives to stability. In cases in which both actors only possess "all but incredible" threats, a bluff equilibrium exists in which the status quo can prevail despite each player's dissatisfaction with it. This outcome results when players assign a higher value to the credibility of a threat—even if the players have doubts—relative to the cost of the conflict that would result from the threats.⁸⁶

ROT 8: Investing in efforts that increase the value of the status quo for adversaries increases the likelihood of deterrent success, even if they do not prefer it. Conversely, lowering the value of the status quo for an adversary can make a challenge more likely. One should not increase the value of the status quo for an adversary if doing so would mean lowering the value of the status quo for oneself. Generally, one should seek a quid pro quo to ensure such measures are not self-defeating.

As Christopher Cotton and Chang Liu point out, successful bluffing can occur when a soft player employs a mixed strategy against an opponent whose type depends on the latter's assessment of the former: If the latter assesses the former to be hard, the latter is soft, and vice versa. For instance, challengers may only challenge if they believe the defender to be weak and not challenge if the former believes the latter to be strong. Given this indifference, wherein the former's threshold for action depends on the latter's type, a softer actor can find an equilibrium wherein the actor's bluff can cause the actor's opponent to back down or concede.⁸⁷

As mentioned previously, increasing the value of the status quo at one's own expense can be self-defeating. For example, many criticized the decision not to challenge the Russians over the Nord Stream 2 pipeline as representing a kind of appeasement that would give Putin even more leverage over Europe and only encourage further provocation.⁸⁸ Given the subsequent increase in tensions over Ukraine, the critics may have had a point.

By way of application, a recent RAND Corporation study found the United States could increase its deterrent effect by becoming more unpredictable. Specifically, the study observed the most promising means to enhance deterrence is to increase the range of US capabilities

85. Zagare, *Games of July*, 46–48.

86. Zagare, *Games of July*, 47.

87. Christopher Cotton and Chang Liu, "100 Horsemen and the Empty City: A Game-Theoretic Examination of Deception in Chinese Military Legend," *Journal of Peace Research* 48, no. 2 (2011): 220–21.

88. Patrick Wintour, "Nord Stream 2: How Putin's Pipeline Paralysed the West," *Guardian* (website), December 23, 2021, <https://www.theguardian.com/world/2021/dec/23/nord-stream-2-how-putins-pipeline-paralysed-the-west/>.

and demonstrate these capabilities increase US response options, making the one the United States chooses harder to predict.⁸⁹ Though such unpredictability can have its own strategic benefit. Cotton and Liu's analysis suggests the unpredictability will only produce a deterrent effect if the other actor's threshold for action depends on the actor's belief its opponent is soft. For example, the United States' "strategic ambiguity" over its willingness to defend Taiwan should the Chinese invade would not have a deterrent effect unless China believed the United States' defense of Taiwan made the United States better off than if it conceded. If China preferred escalation to concession and believed the United States would be worse off if it defended Taiwan, no amount of bluffing would work.

ROT 9: Only bluff under conditions in which one can convince an opponent one has a credible and capable threat—and, even then, when one's opponent's type depends on one's assessment of one's own type.

Unilateral Deterrence

In unilateral deterrence, actors are differentiated by their preference for the status quo: One actor defends a status quo while another challenges it. Giving the sequential nature of these interactions, they are better represented in an extensive form rather than a matrix. This model more accurately describes US relations with China, Russia, and other revisionist actors than mutual deterrence, which more closely models US-Soviet relations during the Cold War, does. But this condition is hardly stable. Circumstances could easily arise wherein, as in the Cold War, American advantage and interests could erode, incentivizing the United States to challenge as well. Figure 2 illustrates how this game proceeds.⁹⁰

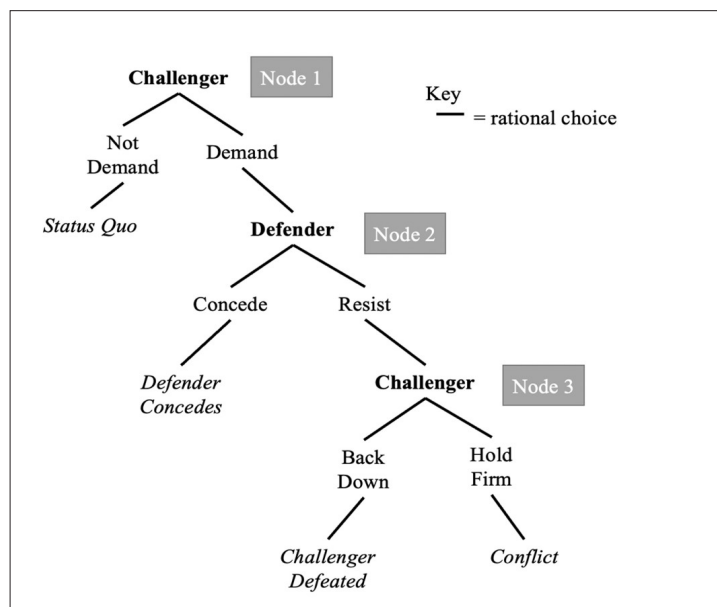


Figure 2. Unilateral deterrence

89. Miranda Priebe et al., *Can the US Military Strengthen Deterrence by Becoming More Operationally Unpredictable?* (Santa Monica, CA: RAND Corporation, 2021), 2.

90. Zagare, *Game Theory*, 134.

Here, the differentiation in actors entails differentiation in preferences. Because of this differentiation, the challenger must decide at node 1 whether to initiate play or live with the status quo. If a challenger decides not to initiate, it could incur both costs that make the status quo not preferable and additional reputational costs if the challenger is perceived to have conceded.⁹¹ If the challenger decides to initiate, then the defender must decide at node 2 whether to concede or resist. Assuming the defender resists, then at node 3, the challenger must decide whether to continue the challenge, and the game ends in conflict, or back down and be defeated. The possible outcomes of this game are similar to those of chicken: status quo, defender concedes, challenger defeated, and conflict.

The most likely outcome depends on actors' types: a hard challenger will challenge; a hard defender will resist; and, if the challenger remains hard at node 3, the challenger will hold firm, and the result will be conflict. On the other hand, if the challenger is soft, no challenge will occur; if the defender is soft, it will concede; and if the challenger softens as the conflict progresses, the challenger will be defeated.

A few important takeaways may be derived from this interaction. First, as the interaction progresses, actors update their information about their adversaries' type. A hard challenger will always challenge. But the preferences that make the challenger hard may result from a belief the defender is soft or the cost of conflict is sufficiently low. Assuming a challenger goes ahead and acts, then at node 2, the defender has an opportunity to revise the challenger's beliefs and signal a higher cost to conflict than the challenger may have expected, causing it to revise its preferences and concede defeat rather than sustain the conflict.⁹²

If the challenger remains hard, then the likely outcome is conflict. This point suggests the challenger's credibility, not the defender's, has a greater bearing on determining the outcome.⁹³ As Andrew H. Kydd and Roseanne W. McManus observe, one way to lower the cost is to provide a range of bargains both sides could prefer to escalation while increasing the cost of escalation itself to affect the other side's risk calculations.⁹⁴ The lesson here is two hard actors will end up in conflict. In this situation, the actors' most rational option is to signal resolve throughout the engagement, offering little in the way of compromise unless a concession would soften the other actor while preserving the interest.

ROT 10: Given a hard challenger, a soft defender should concede; otherwise, it will realize its worst outcome. Hard defenders should expect the interaction to end in conflict. Both actors should seek coercive and attractive measures to soften the other actor.

91. Morrow, *Game Theory*, 39.

92. Zagare, *Game Theory*, 132–33.

93. Zagare, *Game Theory*, 133.

94. Andrew Kydd and Roseanne W. McManus, "Threat and Assurance in Crisis Bargaining," *Journal of Conflict Resolution* 61, no. 2 (February 2017): 331–32.

Tripartite Crisis

A tripartite crisis is a way of modeling extended deterrence because the crisis includes allies, partners, or even proxies who are referred to as “protégés.” Crisis interactions arise when two or more parties have a conflict of exclusive interests: Both parties cannot realize their interests. In a crisis, a relationship can go in one of three directions: war, capitulation, or compromise. Cooperation, whether in the form of capitulation or compromise, depends on the value each actor assigns to the interest, each actor’s assessment of the likelihood of the actor achieving the interest through escalation, and the cost of compromise. Essentially, compromise must be less costly than imposing one’s will on an adversary, which typically involves an escalation to war.⁹⁵ This dynamic is essentially the same one described in the ultimatum game, the difference being an ultimatum need not reflect a conflict of interest.

Things change with the addition of a third actor. In a bipolar world, alignment patterns tend to be rigid because weaker actors have few choices with whom to align. In a multipolar order, actors obviously have more options, so alignment patterns tend to be more flexible. Policy options can be more constrained because a discontented partner can more easily realign.⁹⁶ Actors may even have more than one alignment simultaneously, even among adversaries.⁹⁷ This kind of situation has an inconsistent impact on policy because though more alignment options may be available, the fact they can be held simultaneously may diminish their value.

Unlike unilateral deterrence, one actor challenges the status quo indirectly by making a demand of the defender’s protégé. If the demand is made, the protégé must decide whether to concede or resist. If the protégé chooses to resist, then the defender must decide whether to support the protégé. If the defender supports the protégé, then the protégé must still decide whether to concede or continue resisting, but resisting is more likely depending on the stakes. If the defender does not support the protégé, then it rationally concedes but faces the additional decision of whether to realign its relationship with the defender—which, presumably, the defender would count as a cost.⁹⁸ This interaction is modeled in figure 3.⁹⁹

Of course, adding more players would result in a greater complexity of outcomes. As shown in figure 3, a simple three-actor game would yield six possible outcomes: status quo, challenger wins, protégé realigns, protégé does not realign, challenger concedes, and conflict. Rational challengers will obviously prefer to win. Rational challengers’ second preference is the protégé realigns because this outcome imposes a greater cost on the defender than if the protégé were to concede. This preference is followed by protégé loses; then, the status quo; and, finally, either conflict or challenger concedes, depending on the challenger’s type. If the challenger

95. De Mesquita and Lalman, *War and Reason*, 103.

96. Frank C. Zagare and D. Marc Kilgour, “Alignment Patterns, Crisis Bargaining, and Extended Deterrence: A Game-Theoretic Analysis,” *International Studies Quarterly* 47, no. 4 (December 2003): 588.

97. Seyom Brown, *Higher Realism: A New Foreign Policy for the United States* (New York: Routledge, 2016), 30.

98. Zagare, *Games of July*, 66.

99. Zagare, *Game Theory*, 43.

is hard, it will prefer conflict to concession. The opposite is true if the challenger is soft. Zagare refers to these types of challengers as “determined” and “hesitant,” respectively.¹⁰⁰

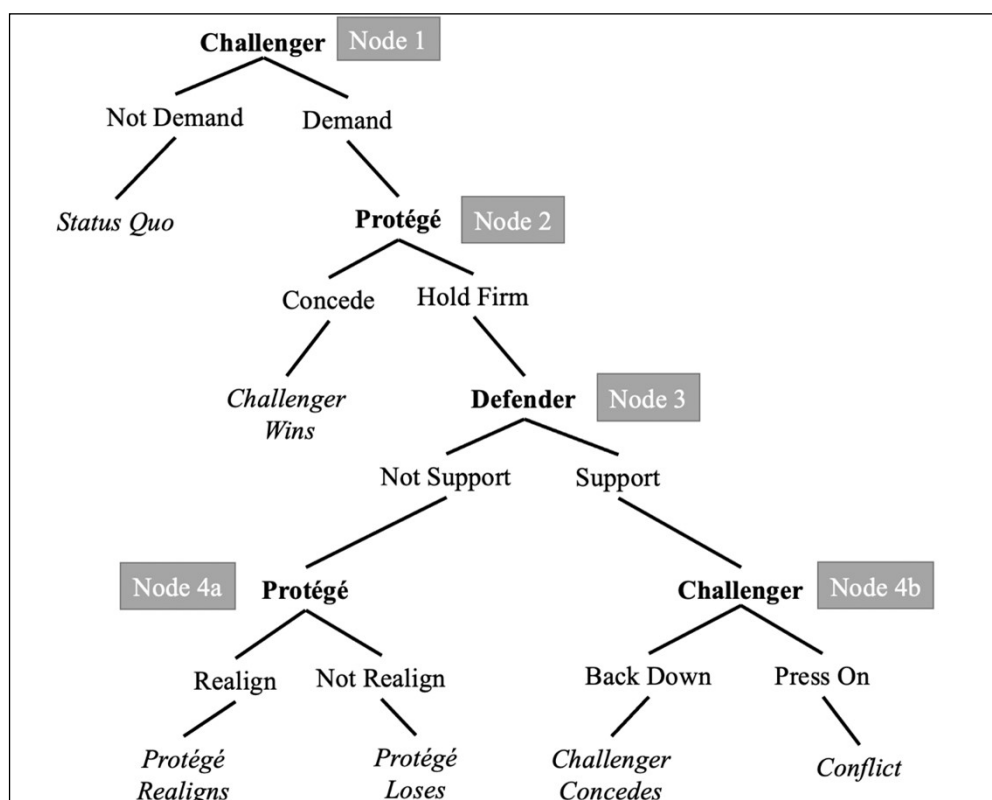


Figure 3. Tripartite crisis game

Because of its association with the defender, a protégé rationally prefers the status quo. This preference is followed by the challenger conceding, given the alternative would be the protégé loses. Of the outcomes that involve loss, protégés prefer the challenger winning given the protégé’s immediate concession costs less than a later one.¹⁰¹ Whether a protégé prefers losing or realigning depends on its type. If the protégé prefers losing to realigning, then it is classified as hard; otherwise, it is classified as soft. Zagare refers to these protégé traits as “loyal” and “disloyal,” respectively. Here, protégés face a strategic dilemma: The more credible protégés’ threat to realign, the more likely the status quo will hold. A credible threat to realign increases the likelihood the defender will remain staunch at node 3, and this outcome is more likely to hold firm because the protégé will expect this support.¹⁰²

Defenders obviously prefer the status quo, but they also prefer for the challenger to concede if initial deterrence fails. This set of preferences places defenders between a “rock and a hard place” because, given a determined challenger, a defender cannot both avoid conflict and preserve

100. Zagare, *Games of July*, 68–69.

101. Zagare and Kilgour, “Alignment Patterns,” 592.

102. Zagare and Kilgour, “Alignment Patterns,” 593.

the defender's relationship with the protégé.¹⁰³ Perhaps less obviously, defenders will next prefer for the protégé to concede; though concession would entail the challenger winning, concession would also reduce defenders' overall costs because it would lower the risk of the protégé realigning. Zagare refers to defenders who prefer to support the protégé despite the risk of conflict as "staunch" and those that prefer the protégé to realign over conflict as "perfidious."¹⁰⁴

Only a determined challenger will initiate. Under conditions of complete information, conflict results if a protégé holds firm and the defender decides to support. The status quo holds when the protégé is disloyal and prefers realigning to losing because these preferences motivate the defender to intervene, which makes the defender's threat credible.¹⁰⁵

Under conditions of incomplete information, these outcomes change. Challengers are still determined; otherwise, no challenge exists. A protégé and a defender can only assign probabilities to each other's type. Over the course of the interaction, a defender can update its beliefs about a protégé's preferences based on the latter's response to the challenger's demand. In updating its beliefs, the defender must consider five possibilities: a disloyal protégé will hold firm; a loyal protégé will hold firm; a staunch defender will support the protégé; a perfidious defender will support the protégé; or a protégé who holds firm will initially be disloyal. These probabilities yield four perfect Bayesian Nash equilibria: settle, separate, hold firm, and bluff.¹⁰⁶

In settlement, the protégé anticipates a perfidious defender and rationally concedes because a loss now is better than a costlier one later. To the extent the defender values the status quo or the relationship with the protégé, this point underscores the importance of signaling staunchness. As will be discussed in the case studies later, not all relationships are created equal, so a defender abandoning some protégés and standing by others may be rational.

Abandoning some protégés while defending others can make establishing a consistent and credible deterrent threat difficult. As discussed earlier, reputation depends more on whether one's relative strength caused a challenger to moderate its demands and whether conceding to it was rational given the costs of conflict. Nevertheless, no actors want to be in a position in which they are forced to respond for insufficient gains, which is a hazard in the cases of alliances, partnerships, and proxies. Thus, the most important lesson to be drawn here may be that actors should enter into relationships cautiously. Being beneficial is not enough; the other's interests and relationships also must not place one in a position in which maintaining the relationship can force a confrontation that is not in one's interest or of one's choosing.

103. Zagare and Kilgour, "Alignment Patterns," 592.

104. Zagare, *Games of July*, 69–71.

105. Zagare, *Games of July*, 73.

106. Zagare, *Games of July*, 76–77.

Separating equilibria play a role in identifying actors by type. A disloyal protégé will hold firm initially because its preference for realigning over losing suggests a greater willingness to impose costs on the defender. On the other hand, a loyal protégé concedes because it prefers losing to incurring the higher costs associated with testing the defender's type and getting it wrong. Perhaps obviously, a staunch defender supports the protégé, and a perfidious defender does not. As a result, the outcomes under these equilibria are the challenger wins when the protégé is loyal, conflict occurs when the challenger is not loyal and the defender is staunch, and the protégé realigns when the defender is perfidious.¹⁰⁷

Under hold-firm equilibria, the protégé holds firm, and staunch defenders always support the protégé, resulting in conflict. But when the defender is perfidious, the outcome depends on the protégé's type. If the protégé is loyal, it loses; if it is disloyal, it realigns.¹⁰⁸ As counterintuitive as this outcome might sound, a protégé may decide to remain loyal to a perfidious defender if both the concession demanded by the challenger and the value of the relationship to the defender establish a threshold wherein the loyalist preference makes sense. Defenders can influence this threshold by increasing their value to protégés.

Though disloyal protégés always hold firm, under bluff equilibria, loyal protégés may do the same. Because loyal protégés prefer losing to realigning, their holding firm is a bluff. This move sometimes works if the defender is staunch, but the move obviously does not work if the defender is not.

This point exposes a problem for defenders. Signaling support for the protégé may embolden it, increasing the likelihood a staunch defender will get drawn into a conflict the defender may not want, and a perfidious defender may lose a protégé. But, if the defender's signal of support is too weak, the challenger is emboldened, with much the same results.¹⁰⁹ This point underscores the potential utility of ambiguity in strategic posturing and communications. Zagare and Kilgour refer to this tactic as making an "intentionally vague commitment," and they cite the Taiwan Relations Act of 1979 as an example. In passing this act, the United States tried to restrain China by signaling the former would support Taiwan should China decide to force the unification issue as well as restrain Taiwan by signaling this support was not unconditional.¹¹⁰

At this point, a discussion of assurances and inducements and their relationship with protégé loyalty would be valuable. Barry Blechman and Stephen Kaplan point out armed forces are most successful when assuring allies and partners.¹¹¹ Moreover, armed forces can perform this task either directly or indirectly. For instance, the deployment of US Marines

107. Zagare, *Games of July*, 77.

108. Zagare, *Games of July*, 78.

109. Zagare, *Games of July*, 78–79.

110. Zagare and Kilgour, "Alignment Patterns," 598.

111. Barry M. Blechman and Stephen S. Kaplan, *Force without War* (Washington, DC: Brookings Institution, 1978), 88–102.

to Thailand during the 1962 Laos Crisis, in which North Vietnamese and Pathet Lao forces were violating agreements on Laotian neutrality, directly assured Bangkok of the US commitment to Thai security while indirectly compelling Russia and China, who had a relationship with North Vietnam and the Pathet Lao, to take steps to control the crisis.¹¹² Because they require behavioral modification, inducements were found to be more difficult than even deterrence or compellence.¹¹³ In part, this difficulty can be attributed to the virtual impossibility of knowing whether the other actor would have acted, regardless of the first actor's reinforcement, assurance, or deterrence. When attempting to modify behavior, even inducements may be subject to political constraints on the targeted actor because changing behavior could involve losing some level of power and influence.¹¹⁴

Protégés can also benefit from some ambiguity in their strategic communications. To the extent a challenger is only moderately dissatisfied with the status quo, an ambiguous alignment policy can strengthen a defender's resolve to support without overly provoking the challenger. But when opposing a determined challenger, too much ambiguity could incentivize it to make a demand while insufficiently incentivizing the defender to support. In response, the protégé could reduce the ambiguity and move closer to the defender, but the protégé would be giving up leverage in the process.¹¹⁵

A challenger must also make decisions about protégé and defender types under incomplete information as well as how much risk the challenger is willing to accept. For determined challengers, the value of challenging increases as the value of the protégé realigning increases or as the value of the status quo decreases. The threshold for initiating a challenge is where the value of one set of possibilities—protégé realigns and conflict—equals or is greater than the value of the status quo. If the probability of conflict is greater than the threshold, then the challenger will prefer the status quo. If the probability of conflict is less than the threshold, challengers will prefer to take their chances on either the protégé realigning, which represents a win, or conflict, which, though not desirable, is preferable to the status quo. As mentioned previously, the higher a challenger's satisfaction with the status quo, the less likely the challenger is to challenge the status quo, even if the challenger does not prefer it.

With complete information, the status quo can survive when a challenger is hesitant or when it is determined, the defender staunch, and the protégé disloyal. This outcome arises because the disloyal protégé's preference for realignment over losing ensures a defender's preference for staunchness, making losing less likely. Otherwise, the challenger wins. But under conditions of imperfect information, protégé type is much less relevant to the outcome because even a high probability of disloyalty can undermine the status quo. Though protégé

112. Edmund F. Wehrle, "A Good, Bad Deal": John F. Kennedy, W. Averell Harriman, and the Neutralization of Laos, 1961–1962," *Pacific Historical Review* 67, no. 3 (1998): 570; and Blechman and Kaplan, *Force without War*, 72.

113. Blechman and Kaplan, *Force without War*, 107.

114. Blechman and Kaplan, *Force without War*, 92.

115. Zagare, *Games of July*, 87.

disloyalty increases the likelihood a defender will be staunch, a highly motivated challenger will be incentivized to take advantage of the disloyalty and initiate a challenge.¹¹⁶

ROT 11: A defender should signal staunch support unless conflict is the defender's worst outcome. When conflict is the worst outcome, a defender may wish to lower the cost of protégé concession to prevent realignment.

ROT 12: Under conditions of uncertainty, a challenger's initial demand should be high to gain information about protégé loyalty and defender staunchness. Protégés should signal ambiguity to balance the demands of both the challenger and the defender more effectively.

Asymmetric Escalation

Like unilateral deterrence, asymmetric escalation involves a challenger and a defender. But asymmetric escalation is different because it introduces two levels of conflict: limited and unlimited.¹¹⁷ In such cases, limited applies more to outcomes than means. As such, a limited result could mean a compromise, such as a negotiated or brokered settlement.¹¹⁸ Asymmetric escalation, which has also been used to model immediate deterrence crises like the Cuban missile crisis, has six potential outcomes: maintaining the status quo, the defender conceding, the challenger escalating, the defender escalating, limited conflict, and all-out conflict. The outcome that manifests depends on both the first actor's type and the second actor's estimation of the first actor's type.

The outcome an actor prefers again depends both on its type and the player's assessment of the player's opponent's type. Though both types of challengers prefer to win, hard challengers prefer all-out conflict to defender escalates, whereas soft challengers prefer the opposite. Defenders have two levels at which their type matters; thus, assessing defenders' preferences is a little more complicated. For example, a defender that is hard at the first level prefers limited conflict to defender concedes, and a soft defender prefers the opposite. A defender who prefers all-out conflict to challenger escalates is hard at the second level, and, again, the soft defender prefers the opposite.¹¹⁹ See figure 4 for a depiction of the asymmetric escalation game.¹²⁰

116. Zagare and Kilgour, "Alignment Patterns," 594, 603.

117. Zagare, *Games of July*, 113.

118. Zagare, *Game Theory*, 85.

119. Zagare, *Game Theory*, 86–88; and Zagare, *Games of July*, 118–19.

120. Zagare, *Game Theory*, 102.

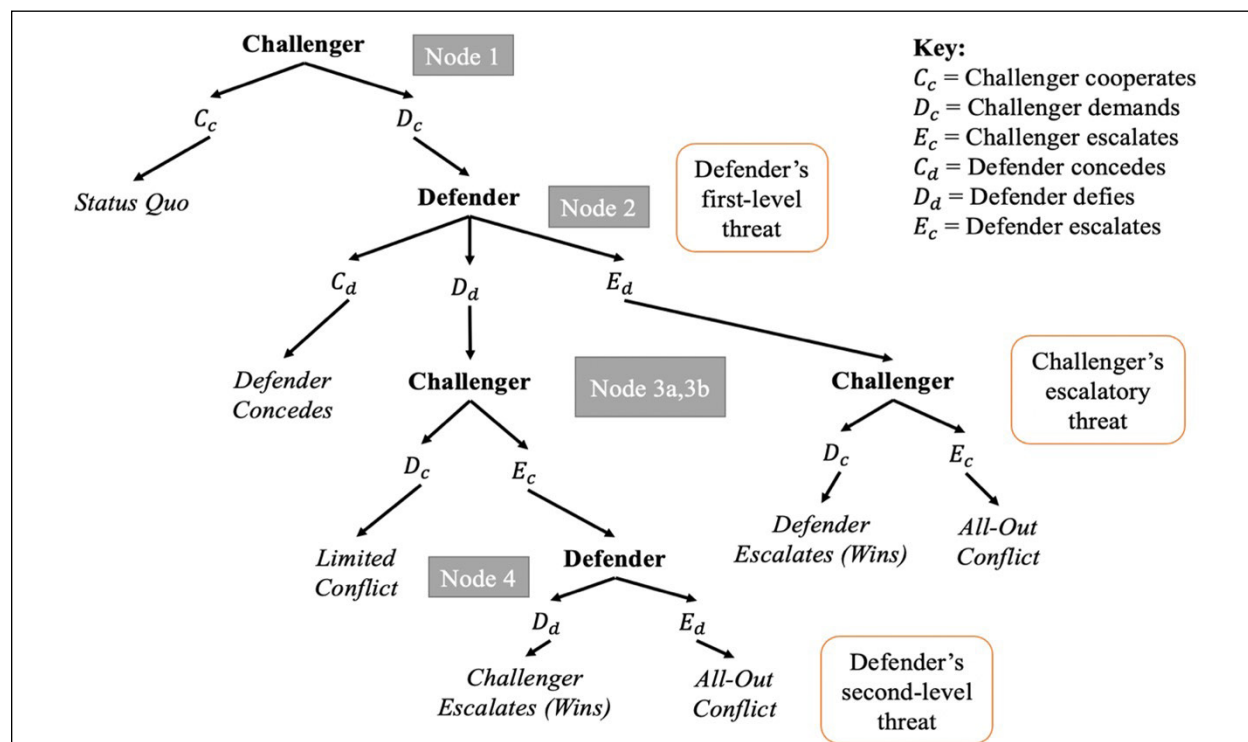


Figure 4. Asymmetric escalation game

In response to a challenger, a defender can cooperate, defy, or escalate in multiple ways. The defender can comply with the challenge or placate the challenger with another acceptable alternative. In some cases, the defender can defy by ignoring the challenge or risk escalation through the employment of a counterthreat; punishment; or a mixed strategy that contains elements of cooperation, defiance, and escalation.¹²¹

Given the challenger is assumed to be hard by virtue of the challenge, the Bayesian equilibria fall into the categories of escalatory deterrence, no response, and spiral family. In such interactions, escalatory deterrence equilibria are unlikely. For these equilibria to exist, a defender would have to believe challenges to the status quo were a mistake on the part of a soft challenger. Although such a situation is possible, a defender would only believe such a situation in rare circumstances. For instance, if China were to invade Taiwan, the United States would have to believe the former did so despite escalation to war being the former's least preferred outcome. As Zagare observes, a defender that experiences a hostile challenge is unlikely to conclude a challenger will be soft in future interactions, and, as a result, such an outcome is not plausible when a challenger is in fact hard.¹²²

121. Russell J. Leng, "When Will They Ever Learn? Coercive Bargaining in Recurrent Crises," in John A. Vasquez and Marie T. Henahan, *The Scientific Study of Peace and War: A Text Reader* (Oxford, UK: Lexington Books, 1999), 120–21.

122. Zagare, *Games of July*, 125.

No-response equilibria can occur when both a challenger and a defender are hard at the first node, but the defender is soft at the second node. Assessing the challenger is hard, a defender that is soft at the second node will not respond to the initial challenge because of the defender's preference to avoid escalation. A defender that responds in kind rather than escalating signals to a challenger the former is soft at the second node.¹²³ This equilibrium more likely models Sino-American interactions over Taiwan. Although describing the United States as hard relative to a challenge by China is probably accurate, given the relative asymmetries between China's interest in Taiwan and the United States, whether the United States is hard enough to escalate to war should China act against Taiwan is an open question. The United States would potentially choose options that would impose a cost but avoid escalation. Such a strategy would concede the challenge, but the strategy would set conditions for future deterrence.

Spiral equilibria are more interesting and more likely given the nature of the United States' relations with its adversaries. These equilibria occur when mutual fear and vulnerability lead actors to increase their advantage in a way that reinforces similar fears in another actor, leading to escalation. Though conflict is one perfect Bayesian equilibrium in this family, four other equilibria may occur, depending on how actors assess the other actor's type, in which reversing or limiting escalation is possible.¹²⁴

The first two of these equilibria is limited-response deterrence equilibria, which arise when challengers believe a defender is hard at both levels and its deterrent threat is highly capable and credible. Simply put, if a defender's deterrent threat is capable and credible at node 3, a challenger has every reason to believe the defender will escalate at node 2, which would make the defender hard at node 1. If this assessment is true about the defender, then the challenger's choices are ultimately conflict or concession. Even if a defender is soft at the first level, the defender may defy rather than escalate at the second, forcing the challenger to choose between limited or all-out conflict at nodes 3 and 4.¹²⁵

This dynamic is somewhat reflected in the standoff over Ukraine prior to the Russian invasion. As previously mentioned, NATO's apparent unwillingness to escalate to a conventional war likely signaled softness to the Russians, even though NATO countries were clear about imposing other long-term costs, such as sanctions. The Russians could have considered how NATO members' preferences would change given an invasion and how this change might increase the members' willingness to risk escalation, such as by increasing lethal military assistance to prevent a Russian victory or supporting continued irregular operations should the Russians win, much like the United States did against the Soviet Union in Afghanistan. Working backward, NATO could have increased its deterrent effect by credibly signaling a second-order willingness to provide meaningful military assistance or to sponsor a costly insurgency before any Russian

123. Zagare, *Games of July*, 126.

124. Andrew Kydd, "Game Theory and the Spiral Model," *World Politics* 49, no. 3 (April 1997): 385.

125. Zagare, *Game Theory*, 91.

attack, even though the first-order deterrent would rationally fail. Whether such signaling would have been convincing is unknowable. By working backward, NATO could have identified measures it would take should deterrence fail to compensate for a rational desire to avoid escalation.

Should this strategy fail, other possible equilibria in which a defender can avoid concession or defeat remain. These equilibria are constrained limited response and escalatory limited response. Under both, hard challengers initiate conflict because they perceive the defender to be soft. If the defender is soft, then the challenger wins. If the defender is hard, then the challenger must update its information about the defender as well as reassess the challenger's own type. Under the constrained limited-response equilibrium, the challenger reassesses the defender as hard at the second level and settles for a limited conflict, wherein both defy but neither escalate. Thus, by way of example, even if the Russians invaded Ukraine despite prior warning of NATO support to an insurgency, providing such support would still be in NATO's interest because doing so may achieve a limited settlement at the third node.

Under the escalatory limited-response equilibrium, the challenger continues to assess the defender as soft and escalates as a result. To end in a limited conflict under this equilibrium, the defender must be more likely to be hard at the first level but soft at the second. In this case, the hard defender will likely escalate. If the hard defender escalates, a challenger that is soft at the second node will concede, and a challenger that is hard at the second node will escalate. If both defender and challenger are soft at the third node, the possibility for a limited settlement exists because neither wishes to escalate, but they are not likely to be willing to give up any gains. On the other hand, if the challenger is hard and the defender is soft, the defender will concede. If both remain hard, the most likely outcome is all-out conflict.¹²⁶

These points suggest the importance of establishing an escalation management plan prior to any interaction. Herman Kahn famously observed escalation dominance goes to the side that "fears eruption the least" or, at least, the side that is best able to bear the cost should the conflict escalate.¹²⁷ This asymmetry of fear differentiates soft and hard actors from each other. But, as noted earlier, as an interaction iterates, actors' preferences can change as the actors take in new information about changes in the strategic environment, including information about their opponents. In addition, as the actors' preferences change, the actors' types can change as well. More to the point, perhaps, actors can influence their opponents' choices by providing rational alternatives to escalation. Thus, effective escalation management requires at least three factors: a credible and capable threat, an "off-ramp" to give an opponent a less costly yet rational alternative to continued escalation, and the ability to communicate to adversaries in ways they will both understand and trust.

126. Zagare, *Game Theory*, 91–93.

127. Herman Kahn, *On Escalation: Metaphors and Scenarios* (New York: Frederick A. Praeger, 1965), 290.

Though perhaps not necessary for escalation management, international support can also play a critical role in successful de-escalation, particularly where opponents are sensitive to political isolation. This point works both ways. If one acts unilaterally, one risks becoming isolated, undermining the de-escalatory effect. On the other hand, isolating adversaries can constrain their ability to act. For instance, the US strike that killed Qassem Soleimani received widespread condemnation, even from European partners.¹²⁸ Given these partners' utility in shaping Iranian behavior, alienating them just strengthened the Iranian position and was thus self-defeating.¹²⁹

Limited Conflict and Quagmires

Things get even more complicated when a fourth actor is added, as when two external parties are each sponsoring a protégé. Under conditions for limited conflict, one risks the possibility they will evolve into quagmires or “frozen conflicts.” Quagmires happen when the cost of conflict is not worth the gain realized from winning, but the cost of withdrawal is higher than the cost of continuing to fight.¹³⁰ Avoiding quagmires requires paying attention to both the costs and benefits associated with the conflict and external factors, such as domestic politics, decision-making biases, and differences in actors' time horizons. Quagmires are more likely when external backers can pay a relatively low cost to engage an adversary, and the protégé can manage risk by using irregular means that focus more on imposing costs than occupying territory.¹³¹

This dynamic has several policy implications for avoiding quagmires. The first implication is to avoid proxy relationships, especially when proxies are involved in a civil war or a similar localized conflict. Unfortunately, this position may not always be advantageous. Proxy relationships have significant utility, and civil war often entails other pressures to intervene. Thus, the better alternative is to identify the conditions that lead to quagmires and to seek to establish conditions that will avoid quagmires.

Lower the Value of the Rivalry

Although certainly easier said than done, the more an actor can lower the cost of rivalry, the less likely a quagmire will result. For example, Iran's support for the Houthis movement in Yemen began as a low-cost effort to inflict a moderate cost on Saudi Arabia and potentially tie up its forces on the Arabian Peninsula. The United States' decision to support Saudi Arabia's efforts to defeat the Houthis increased the stakes for Tehran because this decision provided Tehran an opportunity to impose costs on the United States as well. By raising the stakes this way, the United States enabled Iran to trap the

128. “World Reacts to Killing of Iran's Qassem Soleimani,” Euronews (website), January 3, 2020, <https://www.euronews.com/2020/01/03/a-declaration-of-war-and-an-escalation-the-world-reacts-to-soleimani-killing/>.

129. C. Anthony Pfaff, “Military Ethics below the Threshold of War,” *Parameters* 50, no. 2 (Summer 2020): 73–74, <https://press.armywarcollege.edu/parameters/vol50/iss2/10/>.

130. Jonah Schulhofer-Wohl, *Quagmire in Civil War* (Cambridge, UK: Cambridge University Press, 2020), 4.

131. Schulhofer-Wohl, *Quagmire*, 48–51.

former in a conflict in which the cost of continued support to the Saudis was less than the gain of being perceived as a stalwart ally. Unfortunately, the ensuing quagmire allows Tehran to drain US resources continually and diminish its regional reputation as an effective ally.

Separate the Proxy Relationship from One's Other Coercive Capabilities

As stated before, deterrence depends on a capable and credible threat. A threat is capable if it places an aggressor in a worse position than if the aggressor had not acted. The threat is credible to the extent one is not worse off for employing it.¹³² Under these conditions, other determinants, such as geography, conflict history, and military power projection capabilities, are more relevant to assessing resolve than any one past action. If an actor's adversary believes its future behavior will place the actor in a situation in which escalation would be rational, successful deterrence is more likely.¹³³ But the point here is not to suggest a particular capability in which the United States should invest; whether a threat is capable and credible depends on the behavior an actor wants to deter, which, in the context of the US-Iranian relationship, is too complex to be addressed adequately here. Rather, the point here is to remove a reason for maintaining a proxy relationship because the actor is concerned about reputational costs.

Ensure Sponsor-Proxy Interests Are Aligned as Closely as Possible

The more closely sponsor and proxy interests are aligned, the less likely the costs the sponsor and proxy are willing to absorb will diverge. If costs do not diverge, then both sponsor and proxy are likely to share similar incentives for the escalation or termination of hostilities. This divergence is particularly evident in the Iranian-Houthi relationship, in which Iran benefits more from the conflict continuing than from resolving it, even on terms that would be favorable to the Houthis. Finding ways to change the incentive structure could set conditions for a diplomatic resolution. Changing the incentive structure will not likely be achieved by interventions that are intended to disrupt Iranian support or impose costs. Rather, changing the incentive structure will more likely be achieved by lowering Iran's stakes for arriving at a diplomatic solution.

Engage in Proxy Relationships Only to Avoid Disadvantage, Not Merely to Gain Advantage

Given the potential costs associated with proxy relationships, an element of necessity should be present to warrant engaging in them. Engaging in proxy relationships simply to gain an advantage both is potentially destabilizing and sets up the conditions for a quagmire, thus undermining any advantage that may be gained. Rather, actors should consider necessity in terms of avoiding a disadvantage that is roughly equal to the cost of the intervention. For instance, from Iran's perspective, the country's support for militias in Syria and Iraq is a way for Iran to offset the perceived US advantage represented by its ability to project military power. By contrast, Tehran's support for the Houthis did not offset a Saudi advantage as much as create one for itself. In this sense, whether Tehran's support for the Houthis was necessary is unclear.

132. Zagare, *Game Theory*, 130; and Quackenbush, *General Deterrence*, 48–51.

133. Todd S. Sechser, "Reputations and Signaling," 328–30; and Leng, "When Will They Ever Learn?," 135–36.

This point suggests all parties should consider how their relationships affect the balance of power and its rivalries. The point here is not one should not seek advantage over rivals; rather, the point is one should be aware of how seeking such an advantage risks a quagmire, which undermines one's interests.

Manage Escalation and De-escalation

To the extent sponsors have a relationship with a belligerent actor involved in a civil war, Jonah Schulhofer-Wohl's analysis clearly shows all parties are better off if civil war is avoided altogether. This point suggests offering proxies an off-ramp to escalation is generally in the interest of the sponsoring rivals. This point is one of the most insightful to arise from Schulhofer-Wohl's analysis. As tempting as limiting escalation by engaging proxies as well as proxies de-escalating to avoid defeat sound, this kind of risk management can be self-defeating and result in the huge human costs Schulhofer-Wohl describes. Escalation is not preferable to de-escalation. Rather, for de-escalation not to be self-defeating, the means one employs must be aligned with the ends one is trying to achieve. If such an alignment is not possible, then one should consider finding ways to resolve the conflict or, failing resolution, withdraw support.

ROT 13: Avoiding unwanted escalatory spirals depends on maintaining credible and capable threats as well as a willingness to accept a limited outcome when confronted by a hard actor. To achieve a limited outcome, actors need to have the capability to respond in kind without risking escalation.

ROT 14: To manage escalation, identify off-ramps throughout the escalatory cycle as well as plan to incentivize the adversary to take the off-ramps. To further encourage de-escalation, engage in complementary diplomatic efforts to isolate the adversary.

ROT 15: To avoid quagmires, actors need to ensure they have accounted for external factors that affect their and their adversaries' costs of commitment and withdrawal.

In addition to the ROTs, this analysis offers several takeaways. Portraying strength and imposing costs are often counterproductive to coercive success. The outcome of these interactions under perfect deterrence theory suggests an approach to competition and conflict that is very different from the prescriptions of classical deterrence theory. First, unlike in classical deterrence theory, the status quo—or, more importantly, the value actors assign to it—plays an important role in understanding deterrence success and failure. Even where challengers do not prefer the status quo, they are less likely to challenge it the more they value it. This preference is strengthened according to the probability actors assign to the defender's deterrent threat being credible. Whether the status quo survives depends a great deal on the capability of actors' deterrent threats.

Conclusion

Perfect deterrence theory suggests an overall strategy that prioritizes cooperation. When cooperation fails, deterrence depends on one's willingness and ability to reciprocate a similar level of pain. This reciprocation establishes credibility. In the event of a crisis, perfect deterrence theory argues for a flexible negotiating stance that would aim to increase the value of the status quo for the defender through increasing either the cost of conflict or the attractiveness of the status quo. Classical deterrence would simply rely on a more coercive negotiating stance aimed at increasing the cost of escalation. Signaling a willingness to compromise but not capitulate offers the best opportunity for avoiding unnecessary escalation.

In developing a deterrent threat, perfect deterrence theory also suggests overkill capabilities are wasteful in general and occasionally destabilizing, especially when they are so severe as to lack credibility. Rather, all perfect deterrence theory requires is minimal deterrent threats understood as threats that ensure an adversary will prefer losing to conflict. Perfect deterrence theory also indicates the higher the cost of conflict, the more difficult maintaining extended deterrence will be for defenders because they will discount payoffs for responding to an indirect challenge. Perhaps more to the point, actors need to develop a more comprehensive deterrent approach that keeps in mind both the utility of refraining from acting needs to be acceptably high and the utility of acting needs to be relatively low.¹³⁴ In the following section, I apply the principles and guidelines articulated in this section and previous ones to US competition with China, Russia, and Iran.

Applications

This section applies the rules and insights from the analysis in the previous sections to US relations with China, Russia, and Iran. In general, coercive success depends on establishing multiple credible and capable threats directed at adversaries while providing inducements and assurances to increase the satisfaction of the adversary with the status quo and to lessen the cost of concession because of fear of future demands. Such inducements and assurances should not lower one's own satisfaction with the status quo. Concessions communicate softness, which incentivizes challenges. Thus, incentives should entail a quid pro quo of some kind.

Actors can also increase their chances of successfully optimizing their outcomes by avoiding single-iteration interactions and ensuring means of communicating information about one's preferences (when such communication is to one's advantage) that an adversary will trust. In addition, an actor should avoid raising the stakes of a conflict or making excessive demands unless the actor is prepared to escalate or is trying to gather information about an adversary's preference and can bear the cost of conceding, if only temporarily. These points do not exhaust strategy in competition, but they do provide a starting point.

134. Zagare, *Game Theory*, 139–42.

China

Of all the United States' adversaries, China is probably the best at employing a whole-of-government approach to competition. Indeed, its approach is better described as a whole-of-society approach because China's authoritarian nature allows it to harness elements of national power, especially economic, in ways that are not possible in democratic societies with decentralized, free-market economies. In speeches reportedly made in 2016, Jin Canrong, a close advisor to President Xi Jinping, detailed a strategy in which all of these elements come together to achieve global hegemon status. This strategy comprises six sequential "moves" that involve intertwining US and Chinese interests while establishing alternatives to US hegemony, like the Belt and Road Initiative, to eventually displace the United States' influence—first regionally, and then globally.¹³⁵ The idea seems to be by cooperating with the United States in some areas, China will be in a better position to challenge the United States in other areas.

One must be careful about inferring too much about a state's strategy from speeches—even those from close advisors. But Jin's approach is much like the one described by Rush Doshi in *The Long Game: China's Grand Strategy to Displace American Order*. Doshi argues China seeks to blunt US influence in stages by building a foundation for an alternate order and then expanding its influence—first regionally, and then globally. In building a foundation for an alternate order, China will seek to assert leadership over current international governance, undermine Western unity, and advance autocratic norms to replace liberal ones. China will also seek to surpass the United States economically and technologically to provide more attractive alternatives to relations with it.¹³⁶

In the context of this discussion, China plays the role of challenger to a status quo the United States prefers to defend. Thus, China's strategic challenge is determining when and over what to challenge as well as how to deter the United States from responding. These aspects are related. Choosing interests where a US response would be more costly than the revised status quo significantly lessens the likelihood of a US response. Where these conditions do not exist, China must determine how to create them. The United States' strategic challenge is to ensure the value China assigns to the status quo is higher than the cost of challenging the status quo. As noted previously, this equation does not require the Chinese government to like the status quo; the equation only requires the government to prefer the status quo to suffering the deterrent threat. But for this threat to be credible, the Chinese government must believe from the US perspective, triggering the threat places the United States in a better position than not. The challenge here for the United States is across individual issues, triggering the threat will not always place the United States in a better position. Nevertheless, a cumulative loss of these interests would place the United States at a significant disadvantage.

135. Manyin Li, "What China Really Wants: A New World Order," *National Review* (website), March 7, 2021, <https://www.nationalreview.com/2021/03/what-china-really-wants-a-new-world-order/>.

136. Rush Doshi, "The Long Game: China's Grand Strategy to Displace American Order," Brookings Institution (website), August 2, 2021, <https://www.brookings.edu/essay/the-long-game-chinas-grand-strategy-to-displace-american-order/>.

The difficulty here is any strategy that simply entails the imposition of costs can encourage resistance because such a strategy raises the stakes. Consider, for example, China's pressure campaign in 2021 against Australia. In response to Australian government criticism over Chinese human-rights abuses in Xinjiang, the takeover of Hong Kong, as well as limits Australia imposed on China's influence efforts, the Chinese government imposed punitive economic measures against Australia's beef, wine, and coal industries, resulting in a loss of \$7.3 billion. Rather than conceding, these measures created a rare political unity among Australia's political parties and incentivized popular support for resistance. Indeed, then-Prime Minister Malcolm Turnbull emphasized the importance of Australia standing its ground because giving into bullies only invites more demands. Other countries in the region then joined Australia in condemning China's attempts at coercion.¹³⁷ Thus, China's effort to impose costs on Australia both built greater regional unity against the country's influence and fed the narrative of China as regional bully, which has built regional opposition as well as made future cooperation difficult for China.

Therefore, imposing high costs on Chinese provocations could have a similar backlash effect, at least with Chinese domestic audiences and close partners. Moreover, a sufficiently strong response would simply play into the Chinese narrative of the United States as global hegemon, which would increase China's resilience while possibly undermining US partners' resolve. Nevertheless, US partners have their own interests in opposing China; thus, their opposition has a *prima facie* credibility, especially where territorial boundaries are at stake. Perhaps more importantly, because the stakes are smaller, they are low enough to create more space for cooperation. In addition, because the stakes are more numerous, the possibility of increasing China's costs above its threshold to act is higher.

Managing Sino-American relations requires deterrent threats that affect China's political, economic, and military interests as well as maintain its satisfaction with the status quo at levels high enough to make challenges at least less rational, if not less likely. The next section examines how to set these conditions in the context of China's efforts to reunify with Taiwan. Should the Chinese government act unilaterally and use military force to settle the issue, the United States would lose a valuable partner and its reputation for being stalwart would suffer. In addition, this loss of reputation could make other partners and allies more vulnerable to Chinese coercion.

Taiwan

The strategic challenge for the United States vis-à-vis Taiwan is to convince the Chinese government that both the United States is capable of preventing China from forcing Taiwan into reunification and doing so is in the United States' interest, given the costs China would likely impose. As ROT 2 states, to achieve these goals, the United States would

137. Michael Schuman, "China Discovers the Limits of Its Power," *Atlantic* (website), July 28, 2021, <https://www.theatlantic.com/international/archive/2021/07/china-australia-america/619544/>.

need to develop an underlying infrastructure of threats that, if acted on, would make the United States better off and China worse off should it decide to invade. The difficulty here is merely making a statement to this effect will not be convincing. Obviously, China cares more about reunification with Taiwan than the United States does.¹³⁸ Thus, something as provocative as offering Taiwan defense assurances would not likely impact China's assessment of US credibility; indeed, even imagining what would be difficult. However, a recent survey indicated more than half (52 percent) of Americans "support using US troops to defend Taiwan against a Chinese invasion of the island."¹³⁹ Mobilizing such opinion to convince Beijing American-elected officials stand a better chance of reelection by defending Taiwan than not could at least begin to build the case for credibility.

Second, as ROT 3 suggests, one should avoid raising the stakes associated with a particular conflict of interest unless escalation—and, likely, war—are more in one's interest than the status quo. In this context, stakes are a function of both the value of the interest and the likelihood of conflict. Thus, the higher the stakes, the more tempting bearing the cost of acting or any subsequent escalation will be. Under such conditions, actors may feel an urgency to act because they want the advantages associated with seizing the initiative and are willing to bear whatever costs they incur.¹⁴⁰

Third (and related to the second) is increasing the value of the status quo for adversaries raises their threshold for action. The seventh ROT states raising an adversary's threshold for action increases the likelihood one can preserve the status quo, and one can do so by signaling resolve, lowering the gains of defecting, or raising the benefit of cooperating. Increasing the value of the status quo should not be confused with appeasement. Rather, doing so lowers the value one assigns to the status quo can be self-defeating. Thus, anything the United States might offer should come with something of value in return. Moreover, an adversary does not have to like the status quo to prefer it to war. As Patrick Porter and Michael Mazarr point out, invading Taiwan may give the Chinese government a domestic boost as well as provide a platform for extending the government's ability to project power and conduct intelligence, surveillance, and air defense. These benefits would likely come at the cost of depleting China's more effective combat forces as well as triggering a region-wide military buildup. Invading Taiwan would also likely isolate China internationally, as Russia has been isolated because of its invasion of Ukraine, making achieving its other foreign policy objectives difficult.¹⁴¹ These points suggest despite China's strong desire for unification with Taiwan, accomplishing this goal may not be worth the cost

138. Lindsay Maizland, "Why China-Taiwan Relations Are So Tense," Council on Foreign Relations (website), May 10, 2021, <https://www.cfr.org/backgrounder/china-taiwan-relations-tension-us-policy>.

139. Fang Bing, "Survey: Most Americans Support Defending Taiwan if China Invades," Voice of America (website), August 28, 2021, https://www.voanews.com/a/east-asia-pacific_survey-most-americans-support-defending-taiwan-if-china-invades/6210097.html.

140. Colin Clark, "What Are the Best Ways to Shield Taiwan from a Hungry China?," Breaking Defense (website), July 29, 2021, <https://breakingdefense.com/2021/07/best-ways-to-shield-taiwan-from-a-hungry-china/>.

141. Patrick Porter and Michael Mazarr, *Countering China's Adventurism over Taiwan: A Third Way* (Sydney: Lowy Institute, May 2021), <https://www.lowyinstitute.org/sites/default/files/PORTER%20MAZARR%20Taiwan%20Third%20Way%20COMPLETE%20PDF%20V1.pdf>.

under certain conditions. Moreover, if set properly, these conditions could make China worse off if it invaded Taiwan, giving the United States an advantage. Convincing the Chinese government that winning may be its worst outcome might be the best deterrent of all.

Where the stakes are higher, as with China's desire for reunification, Sino-American relations raise the potential for war, even if it is a relatively small one. As noted previously, if the United States determines this risk is acceptable, then it should signal its willingness to escalate, but it should not do so in a way that raises the stakes. For instance, a signal that violates conditions of the One China policy, such as increasing military cooperation with Taiwan, would likely raise the stakes and make a compromise more difficult on China's part. On the other hand, quietly but openly establishing a posture that signals capability while building political will among partners to impose costs either by threatening a humiliation that will undermine the Chinese Communist Party's domestic standing or allow for the portrayal of the party as the humiliator would still offer an adequate deterrent but not raise the stakes as drastically.

For China to resolve Taiwan's status rationally using military force, China would have to believe either of the following: the value of cooperation with the United States is so low, risking the loss of cooperation for the foreseeable future is worth the potential cost; or the value of the status quo relative to Taiwan for the United States is so low, it will neither escalate should the Chinese act nor defect on other kinds of economic and political cooperation. If the United States assesses the likelihood the Chinese possess these beliefs is high, then it should prepare for conflict and signal this preparedness to the Chinese. The United States sending such a signal would likely not change Chinese behavior and would risk escalation. But, if the Chinese hold these beliefs, then escalation was where the relationship was headed anyway.

If the United States assesses the likelihood the Chinese possess these beliefs is low, but the value of reunification is high enough the Chinese are willing to take some risks, then the United States should expect the Chinese to pursue a strategy that limits US choices and undermines the political will of the United States and its partners to act. Several options are available to China if it wants to execute this strategy.

At the time of this writing, China is signaling a willingness to resort to force while the country is engaged in aggressive information operations intended to undermine Taiwan's internal unity.¹⁴² Under these conditions, the Chinese could attempt to seize the narrative by engineering a crisis that leads to large, widespread protests that would give it a pretext for intervention. Such an intervention would not have to be overtly militaristic and could be patterned after the Russian intervention in Crimea, wherein small numbers of nonuniformed

142. John Feng, "'Prepare for War,' China Military Warns in New Propaganda Poster for Taiwan," *Newsweek* (website), June 6, 2021, <https://www.newsweek.com/prepare-war-china-military-warns-new-propaganda-poster-taiwan-1599354/>; and Kathrin Hille, "Taiwan's Unity Cracks under Chinese Disinformation Onslaught," *Financial Times* (website), June 29, 2021, <https://www.ft.com/content/f22f1011-0630-462a-a21e-83bae4523da7/>.

special forces and proxies set conditions for a referendum on unification, which easily passed, likely due to Russia's ability to manipulate voter turnout and control reporting over the results.¹⁴³

Though a staged referendum conducted under the influence, if not control, of the Chinese government could easily be dismissed as fraudulent, when combined with the threat of military force, such a referendum would raise the cost of counterintervention and could be an effective deterrent to a US response. The vote would sow doubt among US partners about the validity of any military response, and the prospect of a Chinese military victory over the United States would likely deter anything but a political or economic response the Chinese could easily dismiss. As a recent US war game reportedly simulating a US response to a Chinese invasion of Taiwan illustrated, the Chinese can impose significant costs to US military operations and may be able to render a US military response ineffective.¹⁴⁴

Russia

The story of current Russo-American relations begins with the collapse of the Soviet Union in 1991. The expectation was reconciliation between the great powers would bring greater global stability, and the subsequent opening of the Russian economy would bring a new era of prosperity to the former Soviet states. Unfortunately, this outcome did not come to fruition. Rather than the expected reconciliation and integration into the world economy, continued NATO expansion and difficulties transitioning to a new economic system embittered Russian leaders, who perceived NATO—especially the United States—was taking advantage of their weakened condition. The United States and NATO did little to assuage Russian leaders' concerns. The treaty organization expanded to include former Warsaw Pact states, and the NATO bombing of Serbia in 1999 placed Russia in the humiliating position of standing by while an ally was attacked.¹⁴⁵

Today, Russo-American relations could be described as failed coercion. Although Russia may have deterred NATO from offering membership to more Eastern European states, Russia failed to deter these states from drawing closer to Western Europe or to compel NATO to rule out expansion of the organization categorically. As for the United States and NATO, they obviously failed to deter Russia from invading Ukraine, which was arguably Russia's response to Ukraine developing closer ties with the West.

143. Paul Roderick Gregory, "Putin's 'Human Rights Council' Accidentally Posts Real Crimean Election Results," *Forbes* (website), May 5, 2014, <https://www.forbes.com/sites/paulroderickgregory/2014/05/05/putins-human-rights-council-accidentally-posts-real-crimean-election-results-only-15-voted-for-annexation/>.

144. Tara Copp, "'It Failed Miserably': After Wargaming Loss, Joint Chiefs Are Overhauling How the US Military Will Fight," *Defense One* (website), July 26, 2021, <https://www.defenseone.com/policy/2021/07/it-failed-miserably-after-wargaming-loss-joint-chiefs-are-overhauling-how-us-military-will-fight/184050/>.

145. Sharyl Cross, *Russia and NATO toward the 21st Century: Conflicts and Peacekeeping in Bosnia-Herzegovina* (Brussels: NATO Academic Affairs Unit, 2001), 28.

The broader challenge for the United States is Russia largely competes in a space where the latter believes the former's interests are limited and with means, such as disinformation, proxies, and the exploitation of corrupt actors, the former and its allies have difficulty directly addressing. Thus, as ROT 2 suggests, the United States needs to identify a threat that will make Russia worse off and is rational to employ. As with China, part of the strategic challenge vis-à-vis Russia is maintaining a credible threat, even when a capable one exists. Russia has placed the United States in a position where it is almost always soft, and Russia is almost always hard. Under such conditions, the United States is almost always in a position in which concession is the country's most rational course of action, and these concessions can accumulate over time to Russia's significant strategic advantage.

Fortunately, the space where Russia can dominate is fairly limited to non-NATO states in its near abroad and authoritarian states in other regions, like Venezuela, Angola, and Syria, whose partnership potential with the United States is extremely limited.¹⁴⁶ Thus, under conditions of a tripartite crisis, the United States will typically play the soft actor to Russia's hard actor. This point suggests in most interactions, US partners will either concede to Russian demands or switch allegiances. Although the United States can likely do little to curb Russia's influence among such actors, the United States can limit these actors' ability to provoke regional instability by empowering allies and partners with whom the country has a bigger stake. This empowerment should increase the allies and partners' credibility, if not also that of the United States.

Empowering allies and partners may not deter Russian provocation. In these cases, the United States has to choose between supporting the partner and risking an unwanted conflict, abandoning the partner and risking its realignment, or underwriting the partner's concession to prevent both escalation and realignment. As described in ROT 11, the United States' best course of action depends on whether conflict is its worst outcome. If conflict is the United States' worse outcome, it should consider ways to underwrite the partner's concession because this outcome is not as bad as the partner realigning altogether. If conflict is not the United States' worst outcome, then it should signal support that is backed up by credible and capable threats. For example, political support and military assistance to Ukraine after losing Crimea likely played an important role in promoting Ukraine's ability to resist continued Russian pressure.¹⁴⁷

146. John E. Herbst and Jason Marczak, "Russia's Intervention in Venezuela: What's at Stake?," Atlantic Council (website), September 12, 2019, <https://www.atlanticcouncil.org/in-depth-research-reports/report/russias-intervention-in-venezuela-whats-at-stake>; "Russia in Africa; What's behind Moscow's Push into the Continent?," BBC (website), May 7, 2020, <https://www.bbc.com/news/world-45035889>; and Alexandra Roberts, "Understanding the Relationship between Russia and Syria," *World Affairs* (blog), July 1, 2019, <https://www.aspeninstitute.org/blog-posts/understanding-the-relationship-between-russia-and-syria/>.

147. Lucian Kim, "How US Military Aid Has Helped Ukraine Since 2014," NPR (website), December 18, 2019, <https://www.npr.org/2019/12/18/788874844/how-u-s-military-aid-has-helped-ukraine-since-2014>.

Ukraine

At the time of this writing, Russia's invasion of Ukraine has stalled, and Putin may be revising his campaign objectives to reflect his inability to seize the whole country.¹⁴⁸ In response to the invasion, the United States has sent troops to Europe, including Poland and other Eastern European countries, as a deterrent to further aggression.¹⁴⁹ Along with other partners, the United States has also imposed severe sanctions on Russia and sent lethal military assistance to Ukraine.¹⁵⁰ In an apparent effort to lower the stakes involved in these deployments, the United States promised not to “permanently station” troops in former Soviet states.¹⁵¹ Also, before the invasion, US officials made multiple statements that promised a “severe and a united response” and suggested the United States would limit escalation by avoiding any direct fighting between NATO and Russian forces.¹⁵² The statements that moderated the US threat or suggested NATO countries did not have a consensus may have created the impression the NATO position is soft relative to Ukraine.¹⁵³

NATO is not the only side that may have erred in the run-up to the invasion. On December 17, 2021, Russia issued an ultimatum demanding no further enlargement of NATO to the east, cessation of military cooperation with “post-Soviet” countries, the withdrawal of US nuclear weapons from Europe, and the cessation of all military activities in Ukraine. Russia also demanded a withdrawal of NATO forces to the borders that existed in 1997, a withdrawal that would include the 14 Eastern European and Baltic states that joined after that date.¹⁵⁴ These demands would both prevent military intervention in Ukraine and critically impair the alliance's ability to meet its defense obligations under article five.

The third ROT, which states one should only raise the stakes when escalation is the preferred alternative, suggests in issuing its ultimatum to Ukraine, Russia may have made a mistake. Unless these high demands were part of a separation strategy, as described by ROTs 4 and 12, then they only served to increase NATO's sense of urgency to support Ukraine. If a part of a separation

148. “Ukraine Conflict Updates,” Institute for the Study of War (website), April 2, 2022, <https://www.understandingwar.org/background/ukraine-conflict-updates/>.

149. Dan Lamothe, “What the US Military Is Doing in Response to Russian Actions in Ukraine,” *Washington Post* (website), February 24, 2022, <https://www.washingtonpost.com/world/2022/02/23/us-military-pentagon-ukraine-russia/>.

150. Christina Ruffini and Tucker Reals, “As Biden Predicts Russia Will Invade, US Rushes Weapons into Ukraine with Some—But Not All—NATO Allies,” *CBS News* (website), January 20, 2022, <https://www.cbsnews.com/news/russia-ukraine-war-biden-us-weapons-nato/>; and “What Sanctions Are Being Imposed on Russia over Ukraine Invasion?,” *BBC News* (website), March 24, 2022, <https://www.bbc.com/news/world-europe-60125659/>.

151. Jacqueline Feldscher, “Biden Promises More Troops in Poland, Romania if Russia Invades Ukraine,” *Defense One* (website), January 19, 2022, <https://www.defenseone.com/threats/2022/01/biden-promises-more-troops-poland-romania-if-russia-invades-ukraine/360927/>.

152. Jeremy Herb, Veronica Stracqualursi, and Vasco Cotovio, “Blinken Warns Any Russian ‘Invasion’ of Ukraine Would Be Met with a ‘Severe and a United Response’ Following Lavrov Meeting,” *CNN* (website), January 21, 2022, <https://www.cnn.com/2022/01/21/politics/blinker-lavrov-geneva-meeting-ukraine/index.html/>.

153. Ruffini and Reals, “Biden Predicts.”

154. Agreement on Measures to Ensure the Security of the Russian Federation and Member States of the North Atlantic Treaty Organization, R.U.-NATO, December 17, 2021; and Françoise Thom, “What Does the Russian Ultimatum to the West Mean?,” *Desk Russie* (blog), December 30, 2021, <https://en.desk-russie.eu/2021/12/30/what-does-the-russian-ultimatum.html>.

strategy, then, as ROT 4 recommends, NATO's response should be to signal resolve, even at the risk of an unwanted escalation. In the context of a tripartite crisis, ROT 12 states without NATO's demonstration of initial resolve, Ukraine's most rational response would be to signal ambiguity to place additional pressure on NATO to stand firm. This situation would not be desirable for the United States and NATO; thus, staunch support, even at the risk of some escalation, would be the most rational course of action.

Russia's likely perception of NATO being soft probably lowered the former's threshold to act. Though the invasion cannot be reversed, as ROT 7 suggests, the United States could raise the threshold for further escalation by continuing to signal the intention to provide Ukraine with military assistance, lower the gains Russia would realize if it escalated, or find a way to increase the benefit Russia would realize if it cooperated. These measures could be accomplished in multiple ways. The United States already signaled resolve by increasing lethal military assistance, including the provision of long-range artillery.¹⁵⁵ The United States could lower the benefits of further escalation by, for example, removing restrictions on using long-range artillery inside Russia. Currently, the restrictions are in place to avoid escalation, but, if Russia escalates first, this reason no longer applies.¹⁵⁶ Finally, the United States could raise the benefit of not escalating by providing a path to resolution for Russia, though the options for this path would likely be limited by the interests of Ukraine and other partners.

Nevertheless, even though Western allies may have appeared soft on Ukraine, the invasion was still a risky move for Russia. Sanctions are depriving Russians of much-needed funds, and the ongoing global political isolation may significantly reduce Russia's ability to beat sanctions as well as effectively compete.¹⁵⁷ Moreover, the possibility of NATO expanding to include Sweden and Finland would represent a significant political cost for Putin who likely launched the war, in part, to prevent Ukraine from joining the alliance. Although these measures, by themselves, will not likely change Russian behavior, the invasion may have set in motion efforts by Western European countries to find energy sources alternative to Russian natural gas, a move the countries have been reluctant to make in the past.¹⁵⁸ Such a withdrawal could constitute a severe blow to Russia's economy. Moreover, should Ukrainians mount a successful defense or conduct an effective irregular warfare campaign, Russia could find itself in a quagmire similar to the one experienced

155. Todd Lopez, "Advanced Rocket Launcher System Heads to Ukraine," Department of Defense (website), June 1, 2022, <https://www.defense.gov/News/News-Stories/Article/Article/3050010/advanced-rocket-launcher-system-heads-to-ukraine/>.

156. Courtney Kube and Carol E. Lee, "Biden Admin Will Provide Ukraine with Long-Range Rocket Systems," *NBC News* (website), May 10, 2022, <https://www.nbcnews.com/politics/national-security/biden-may-announce-new-ukraine-aid-package-longer-range-rocket-systems-rcna31329>.

157. Paul Sonne, Jeanne Whalen, and Cat Zakrewski, "A New Iron Curtain Descends on Russia amid Its Invasion of Ukraine," *Washington Post* (website), March 9, 2022, <https://www.washingtonpost.com/national-security/2022/03/09/ukraine-russia-iron-curtain/>.

158. Silvia Amaro, "EU Pledges to Cut Russian Gas Imports by Two-Thirds Before the End of the Year," *CNBC* (website), March 8, 2022, <https://www.cnn.com/2022/03/08/eu-pledges-to-cut-russian-gas-imports-by-two-thirds-before-next-winter.html/>.

by the Soviet Union in Afghanistan in the 1980s. Indeed, the United States has threatened to support such an insurgency should the Russian invasion succeed.¹⁵⁹

Although invading Ukraine may not objectively be in Russia's interests, accounting for personal interests and psychological factors that could affect a leader's decisions is important, especially when the leader is an authoritarian. For instance, Putin could motivate an otherwise irrational and costly (at least in the near term) confrontation with the West to "get Russia off its knees" and assert its "great power" status.¹⁶⁰ This point suggests accounting for such personal and psychological factors should be a part of intelligence estimates when confronting adversaries.

Should the measures not be possible or effective, the United States could still consider bluffing. The ninth ROT states one should only bluff when one can convince an opponent one has a credible and capable threat that will impact the opponent's preferences. As this rule also suggests, bluffing will only have a chance of working if Russia is uncertain about US preferences. If Russia assessed the United States and NATO to be soft and likely to back down, then threatening a military response would likely only provoke escalation. As described in ROT 13, absent a credible and capable deterrent threat, the best the United States can hope to achieve is a limited outcome, which would likely involve a continued Russian military presence in eastern Ukraine and effective Russian control over the largely Russian population there.

In limiting escalation with Russia, American and European interests likely continue to make the two parties appear soft to the Russians. As a result, despite the high costs imposed, Russia's intentions will not likely be altered. Nevertheless, ROT 7 suggests given a failure to portray an adequately hard stance, actors can still raise an adversary's threshold for action by either lowering the gains of defecting or raising the benefit of cooperating. Enacting this strategy could entail aiming for a limited outcome in which Russia receives some sort of sanctions relief, retains control over Russian-speaking areas of Ukraine, or some other relevant concession. Such measures would likely entail political costs that may be seen as rewarding bad behavior. But such measures can still yield gains or mitigate costs should the measures be considered part of an approach to curb Russian aggression in Ukraine.

Although these concessions may not be politically acceptable from a domestic or alliance perspective, one should consider how a harder stance may have affected the evolution of the conflict. The eleventh ROT states deterring a challenger in a tripartite crisis requires signaling staunch support, the credibility of which depends on opponents' belief their adversary will be better off if the crisis escalates. As the defender in this context, a hard United States should have signaled staunch support for Ukraine, even if the signaling meant risking escalation to war. But, as noted previously, a credibility gap may have existed wherein Russian leaders would not believe the United States signaling support for Ukraine was rational. Therefore, whether

159. David Sanger and Eric Schmitt, "US Details Costs of a Russian Invasion of Ukraine," *New York Times* (website), January 8, 2022, <https://www.nytimes.com/2022/01/08/us/politics/us-sanctions-russia-ukraine.html>.

160. Alexander Titov, "'Get Russia Off Its Knees': How Putin Ensures His Legacy Far beyond 2024," *Globe Post* (website), January 21, 2020, <https://theglobepost.com/2020/01/21/putin-legacy-transition/>.

a harder stance would have altered the outcome is unclear. Moreover, provocative measures associated with a harder stance, such as preemptively arming the Ukrainian military or offering a defense guarantee, may have strengthened the Russian narrative, allowing it to portray NATO as the aggressor.

Another concern associated with taking a hard stance when one's preferences do not support it is, to the extent a credibility gap exists, the United States should be careful about how it encourages Ukraine to respond. As described previously, promising security guarantees to protégés may encourage them to act provocatively. In 2008, the United States apparently encouraged Georgia by indicating it would provide security guarantees if Russia attacked. As a result, Georgian forces attacked Russian peacekeepers in South Ossetia who had been there since the 1990s, which then precipitated the Russian invasion.¹⁶¹

As already mentioned, ROT 12 suggests if US resolve is lacking, the United States could consider encouraging Ukraine to signal ambiguity by considering concessions the latter could provide Russia while still threatening an irregular response should Russia choose to invade. Ukrainians may not be receptive because they might see making concessions to Russia at the expense of improving ties with the West as a step backward.¹⁶² Moreover, for the United States, such an outcome is not ideal, but it may be a better outcome than overpromising security guarantees and then not making good on them. As ROT 11 states, where conflict is the worst outcome for defenders in a tripartite crisis, they can consider lowering the cost of protégé concession to prevent realignment. As this rule suggests, if the United States is not prepared to risk further escalation, the nation should also consider measures to lower the cost to Ukraine of making any concessions to prevent it from realigning with Russia.

Iran

The US-Iranian relationship is characterized by unilateral deterrence and asymmetric escalation wherein the United States and its Middle Eastern partners seek to deter Iranian aggression while limiting the costs Iran can impose in response. The second ROT points out where adversaries have credible and capable threats and a similar preference for conflict, little reason for cooperation exists should one side defect. Moreover, once one side defects, little reason exists for renewing cooperation absent a significant concession by at least one of the sides. Currently, in the US-Iranian relationship, this dynamic manifests as a series of tit-for-tat exchanges, often violent, aimed at imposing costs on the other. Iran's objective in these exchanges is to diminish, if not eliminate, the US presence in the Middle East while establishing Iran's credentials as the leader of the Islamic world. The United States seeks to contain Iran's

161. Ted Galen Carpenter, "Four Western Provocations That Led to US-Russia Crisis Today," *Responsible Statecraft* (website), December 28, 2021, <https://responsiblestatecraft.org/2021/12/28/four-western-provocations-that-led-to-u-s-russia-crisis-today/>.

162. Alexander Baunov, "Will Putin Get What He Wants on Ukraine?," *Moscow Times* (website), December 10, 2021, <https://www.themoscowtimes.com/2021/12/09/will-putin-get-what-he-wants-on-ukraine-a75775>.

regional influence, limit the country's destabilizing activities, and ensure it cannot threaten Israel.¹⁶³ These exchanges typically involve a show of force, including overflights and naval deployments, as well as kinetic responses to attacks and other provocations that escalate briefly, until one actor or the other finds an off-ramp.¹⁶⁴

Apparently, little potential exists for the kind of coordination and trust required to avoid the cycle of defection that is rational in arms races. As ROT 1 states, avoiding such single-iteration interactions when possible and mitigating the potential for crisis by ensuring the ability to coordinate with an adversary in a way it can understand and trust is optimal. Thus, the most rational strategy in the near term would be to continue to reciprocate, though specific measures should be proportionate to limit the likelihood of escalation. To the extent possible, these measures should also avoid involving third parties like Iraq because doing so would raise the costs to the United States and result in little gain.

Because the risk of escalation can never be zero, ROT 14 suggests any response should also include an escalation management plan that identifies off-ramps wherein Iran would be incentivized to de-escalate as well as conditions wherein further escalation may be rational from the US perspective. This incentivization would require engaging Iran's core regime equities directly because Iran has so far demonstrated a high tolerance for its citizens suffering and its proxies getting hurt.

The United States could target several such equities. As Michael Eisenstadt points out, Tehran relies on its navy to make good on threats to disrupt the flow of oil, its missile and drone forces to conduct long-range strikes, and its proxies to undertake conventional operations to inflict costs on its adversaries. Eisenstadt also notes Tehran is increasingly making use of cyber operations to inflict costs, though doing so has produced limited effect so far.¹⁶⁵ Given the central role these means play to Iran's national security, threatening to deny, disrupt or destroy them as a deterrent would make sense. Any actions taken to act on such a threat would have to be carefully calibrated as uncoordinated, indiscriminate, or disproportionate responses and would simply feed into the Iranian narrative and likely undermine international support. For example, a direct strike on Iranian proxies would simply perpetuate the cycle of costly (to the United States at least) escalation. Rather, disrupting proxy support networks while imposing costs directly on Iran would perhaps make more sense.

Iran is not a revisionist power in the same sense China and Russia are. Thus, expending extensive resources finding ways to increase the value Iran assigns to the status quo would

163. Christopher Woody, "As the US Flies More Bombers to the Middle East, Experts Doubt Iran Is the Real Audience," *Business Insider* (website), December 31, 2020, <https://www.businessinsider.com/military-activity-in-middle-east-grows-amid-tension-with-iran-2020-12/>.

164. Woody, "US Flies More Bombers."

165. Michael Eisenstadt, *Operating in the Gray Zone: Countering Iran's Asymmetric Way of War* (Washington, DC: Washington Institute for Near East Policy, 2021), 9.

make little sense. The regime depends—to some degree, at least—on its ability to maintain its anti-imperial narrative for domestic legitimacy; thus, the regime will always get a payoff from opposing a status quo the regime did not establish. By distancing itself from its coercive acts, the regime forces the United States to choose among escalatory spirals with nonstate actors that may have a limit but no end or withdrawal available. Nevertheless, the United States and its partners have options available for raising the cost to Iran of challenging the status quo.

First, the United States needs to reconsider the deterrent threats it employs. As ROT 5 indicates, strategies that simply impose costs can have little effect, especially when a significant gap exists between the values adversaries assign to different outcomes. In these cases, as the rule specifies, chances for cooperation are limited because the actor with the higher stake may be incentivized to resist, and the actor with the lower stake may not be incentivized to take risks or employ costly measures necessary to break the resistance. For this reason, sanctions, retaliatory military strikes, and political isolation have so far had a limited impact on Iranian behavior. In part, this ineffectiveness is due to how these measures reinforce the regime's anti-imperialist narrative, which allows the regime to suppress opposition and mobilize sufficient public will to resist. This narrative also makes natural allies out of totalitarian regimes like China and Russia that see in Iran both a partner and a platform through which to compete with the United States in the region. Finally, these measures do not address the means, including illicit and criminal activities, the Iranian regime and other elites employ to circumvent sanctions.

The point here is not necessarily to drop sanctions or other punitive measures. These measures reduce Iran's capability to compete to the extent they deny Iran resources. If the United States wants to change Iran's behavior, however, it needs to do more both to shape the narrative when employing coercive measures and to isolate Iran from potential benefactors like China and Russia. The United States should also place greater emphasis on addressing illicit means by intervening in black markets where Iran trades to deny gains, disrupt activities, or destroy materials.¹⁶⁶

Second, as mentioned earlier, Iranian leadership apparently has limits to the kind of pain they will accept, if not the amount, and they are often the first to seek an off-ramp as an alternative to escalation. The trouble with the current US approach is it allows the regime to pass costs on to its population or its proxies, thereby reducing, if not minimizing, the impact of the costs below the point of influencing regime behavior. The tenth ROT states given a hard challenger, soft defenders should concede; otherwise, they will likely realize their worst outcome (conflict). To avoid being placed in this situation, defenders should seek a mix of coercive and attractive measures to soften the challenger and raise its threshold to act. As this ROT suggests, given Iran is typically a hard actor, the United States should be prepared to escalate. Where escalation is not possible or rational, the United States should avoid

166. Alex S. Wilner, "Apocalypse Soon? Deterring Nuclear Iran and Its Terrorist Proxies," *Comparative Strategy* 31, no. 1: 18–41.

confrontation because it would afford Iran the opportunity to reinforce the country's narrative and portray the United States as a weak and exploitive partner.

In this context, other ways of going after key pillars of Iran's coercive capabilities without resorting to force present themselves. For instance, though the United States should not drop its opposition to Iran's nuclear weapons program, ballistic missile development, or use of proxy forces, the United States could potentially gain by making its demands more acceptable, even if doing so would only result in minor concession. In the case of Iran, such refinements may not be possible. In this event, the most rational course is continuing conflict while looking for opportunities, no matter how small, to change Iranian calculations on cooperation, no matter how small.

This strategy fits in with ROT 4, which points out high demands are generally good for reducing uncertainty about an opponent's preferences but are not likely to encourage cooperation. Because such demands incentivize resolve, as ROT 13 points out, they can result in an escalatory spiral, the control of which depends on credible and capable threats as well as a willingness to accept a limited outcome when confronted by a hard actor. To achieve a limited outcome, actors need to have the capability to respond in kind without risking escalation.

The Joint Comprehensive Plan of Action (JCPOA) is a good illustration of the possibilities and pitfalls of the incremental approach recommended here. The deal offered a possible gain—delaying, if not preventing, Iran's acquisition of nuclear weapons—and constituted little loss because without the deal, Iran was likely to acquire this capability much more quickly. But the deal did not preclude Iran's eventual development of a nuclear weapon after the treaty restrictions expired. In addition, the deal did not address Iran's other malign activities.¹⁶⁷ Furthermore, even while the restrictions were in place, Iran could still potentially cheat, allowing for a faster breakout when the restrictions were formally lifted. Moreover, lifting the sanctions could have made funds available for Iran's ballistic missile program or the country's sponsoring of increased proxy attacks against the United States and its partners. Given these activities existed before the deal, how much of an additional risk any released funds would represent is unclear.

Thus, the deal apparently failed because it offered too little, not because it cost too much relative to any gains. Indeed, the deal's failure may have been more a function of the certainty effect described earlier by Kahneman and Tversky in which changes from near certainty to certainty, no matter how small, carry more weight than changes in the middle ranges. Just as gains are discounted in the future, so are costs. Thus, even if the Iranians obtained nuclear weapons a decade later, the United States would still be in a better position than if Iran obtained them sooner. Moreover, even if the Iranians were to cheat and break out, the United States would still be in a stronger

167. Kali Robinson, "What Is the Iran Nuclear Deal?," Council on Foreign Relations (website), April 28, 2022, <https://www.cfr.org/backgrounder/what-iran-nuclear-deal>.

position to impose new sanctions and further isolate Iran because it was the party that defected. The point here is when adopting an incremental approach, one may have a greater burden to build consensus among those whose support is essential if the approach is to work.

Despite the renewal of talks that would revive the 2015 JCPOA, at the time of this writing, little hope exists of striking a deal that is in the interest of both the United States and Iran. Perhaps ironically, Russia, which was a party to the 2015 agreement, is standing in the way of the deal by demanding Russian trade with Iran not be affected by sanctions imposed on Russia for its invasion of Ukraine—a demand Western parties to the agreement have rejected. Iranian officials were originally angered by the demand, but these officials have since expressed dissatisfaction with the agreement, though they have not provided any further details.¹⁶⁸

Given the way in which the United States withdrew from the JCPOA, incentivizing Iran to agree to anything that requires concessions without providing either significant benefit or significant cost will be difficult. Indeed, the current situation reflects an asymmetry in how each side values its most preferred outcomes. Though both parties would benefit from cooperating, Iran's poor experience with the prior JCPOA sanctions relief gives Iranian leaders little reason to take risks or pay high costs to make a deal. Indeed, Iran increased costs to the United States to reenter talks by insisting the United States drop the Islamic Revolutionary Guard Corps off the US list of designated terrorist groups. Although the current US administration arguably values restoring the original deal more than Iran does, the administration has little incentive to make this concession. While this concession would get the Iranians to the table, it would also undermine the consensus—especially on the part of domestic and international stakeholders that want to see Iran's other malign activities addressed—that would be necessary to overcome any potential certainty bias in the future.

Although the current US administration arguably values restoring the original deal more than Iran does, the administration has little incentive to make concessions that water down the deal or make it less attractive because it enables Iran's other malign activities as a result of insufficient consensus for overcoming any future certainty bias.¹⁶⁹

Given the restoration of the 2015 JCPOA is unlikely, the United States can also set conditions for deterrence by increasing exercises with regional partners that demonstrate the capability to defeat ballistic missiles, deny Iran's maritime forces freedom of action, and damage or destroy critical military capabilities. If possible, these demonstrations could be integrated into current, large, multilateral exercises, such as Exercise Bright Star and Eager Lion, which were postponed due to coronavirus disease 2019. But several participants may decline

168. Parisa Hafezi, John Irishm, and Francois Murphy, "US, Iran at Loggerheads over Nuclear Deal after Russian Interruption," Reuters (website), March 10, 2022, <https://www.reuters.com/world/middle-east/iran-says-us-desire-quick-accord-shows-it-has-no-will-strong-deal-2022-03-10/>.

169. Peter Kenyon, "The Status of Iran Nuclear Deal Talks," NPR (website), May 5, 2022, <https://www.npr.org/2022/05/05/1096943991/the-status-of-iran-nuclear-deal-talks>.

to participate for fear of provoking Iran.¹⁷⁰ A better alternative would likely be to start new exercises with like-minded partners that would gain a deterrent benefit by demonstrating resolve against Iran. Should these exercises happen, they can also be applied as leverage against Tehran to reenter talks.

Although the United States has several protégés in the region, Iran is not capable of forcing a confrontation in which the United States would have to choose between conceding or engaging in a war so costly it would be its worst outcome. The United States, therefore, risks little when it remains a staunch partner. As ROT 11 indicates, unless conflict is the defender's worst outcome (as it seems to be in the case of the United States and Iran), it should remain staunch in support of a protégé. If conflict is not the United States' worst outcome, the ROT recommends lowering the cost of protégé concession to prevent realignment. Nevertheless, Iran could threaten partner interests that are relatively limited such that supporting any escalation would cost more than any possible gain, as evidenced by the current quagmire in Yemen. To avoid diminishing trust or risking realignment, the United States should indicate to partners like Saudi Arabia and the United Arab Emirates in advance the lines Iran would have to cross before the United States would commit significant resources.

The approach recommended here seeks to contain Iran through continued reciprocity while setting conditions that could “change the game” by creating and exploiting opportunities to place Iran in a worse position, particularly in response to a provocation. Placing Iran in a worse position would not merely entail levying higher costs because doing so would only impose pain on the Iranian population—which, perhaps paradoxically, would make the regime more resilient to future pressure.

Conclusion

Coercing adversaries requires both compelling behavior in which they would otherwise not want to engage and deterring behavior in which they would want to engage. As different sides of the same coin, these aspects share similar features, though the features often work in different ways. Both compellence and deterrence rely on threats that are both credible and capable. This credibility depends on whether acting on a threat leaves one in a better position than not acting, and this capability depends on whether the adversary is worse off if one does act. Compellence and deterrence also rely on strategies of denial and punishment. Compellence relies on convincing an opponent its goals are not achievable, and deterrence relies on imposing sufficient costs the opponent is worse off for resisting. Both take direct and extended forms; the former involves only one's ends, and the latter involves the ends of partners.

The important point here is competition is open-ended, and even coercive failures can sow the seeds for future success if one is sufficiently opportunistic and agile to take advantage

170. Jared Szuba, “Coronavirus Likely to Delay Pentagon War Games in Mideast to 2021,” *Al-Monitor* (website), July 17, 2020, <https://www.al-monitor.com/originals/2020/07/pentagon-war-games-mideast-egypt-coronavirus.html>.

of the resulting conditions. Indeed, coercive failure is not always a bad thing because it can provide valuable information about an opponent's preferences, allowing one the opportunity to incorporate lessons from previous iterations to determine the actions to take in the next one. This analysis does not address in any detail whether the United States is sufficiently agile and opportunistic, though this topic can be a fruitful area of future research.

Successful coercion further depends on an adversary believing one has the resolve to carry out the measures one has threatened. But a reputation for resolve can have a counterintuitive impact on competitive success. For instance, when stronger actors escalate for the purpose of reputation, they can incentivize weaker actors to resist because no matter the interest at stake, the latter gets a greater payoff if it can resist such resolve. This resistance is even more likely if the weaker adversary believes it values the outcome more than the stronger one does. Similarly, military advantage can affect outcomes in counterintuitive ways. When faced with military overmatch, weaker adversaries are incentivized to resist, even when the stakes are low, for fear of future demands; they are also incentivized to seek out indirect means for which the stronger actor is not prepared. Taken together, these points suggest successful coercion depends on a credible and capable threat and one that is calibrated to assure adversaries that one's future demands will be limited.

This analysis has also underscored the importance of communication, even among adversaries. In this context, communication is not a function of being able to deliver a message; rather, communication is a function of getting the adversary to listen to and believe the message. Having a direct line is no good if no one on the other end believes you. This point suggests trust in adversarial relationships is important to competitive success. In this case, trust does not arise from virtue; rather, trust arises from each party understanding the other's interests and preferences accurately. For example, if one knows conflict is an adversary's worst outcome, then one has reason to trust assurances about avoiding conflict. Although ambiguity is sometimes preferable to clarity, cultivating sufficient trust to avoid suboptimal outcomes will always make sense.

The Way Forward

This analysis suggests, in addition to the ROTs and case-specific measures previously recommended, the US military should investigate other actions as measures for enhancing competitiveness. First, when appropriate, the United States should consider force postures that provide flexibility and create ambiguity because doing so may be more productive than signaling overmatch and overcommitment, which indicates a preference for war and leaves little room for more peaceful alternatives, especially when the stakes are high.

Second, intelligence collection and analysis should include information on adversaries' preferences, thresholds for action, as well as assessments of one's own preferences and thresholds. Intelligence collection and analysis should also consider the impact of external influences

on adversarial decisionmakers to assess the limits an analysis based on the assumption of rationality can provide. In addition, understanding adversaries' most rational courses of action is a worthy endeavor, even if one assesses the adversaries are unlikely to take these courses, because this knowledge can give one a better sense of the advantage one has should the adversaries act against one's interests.

Third, this analysis suggests the United States should increase its presence in international peacekeeping and similar international venues, thereby increasing the space in which the United States competes. From 1993 to 2020, the United States' contribution to peacekeeping operations went from a high of 115 to 34 in 2020. Even during the peak years of fighting in Iraq and Afghanistan from 2005 to 2012, fewer billets existed, though they started climbing again in 2012. Though this reduction certainly reflects the reasonable prioritization of combat over peacekeeping, Chinese and Russians filled many of these slots, especially in Africa, where they have a significant presence in UN missions and the United States has almost none.¹⁷¹

Fourth, competitive success depends on an ability to impose costs that discourage cheating. The difficulty here is twofold: adversaries typically calculate these costs into their decision to cheat; and nonescalatory means of imposing costs, like sanctions, rarely work. Of course, the tools that work change on a case-by-case basis. Thus, overcoming these difficulties will likely require an ability to impose costs on adversaries' core interests, especially those associated with national security. Addressing such interests will likely raise the costs and risks to the United States. But knowing what the costs and risks are and how to address them will be essential to changing adversaries' behavior.

Following the withdrawal of US forces from Afghanistan, many have raised concerns the United States has lost its competitive edge and will soon be replaced as the global superpower by China with the help of Russia, both of whom will work with Iran to diminish, if not displace, US influence in the Middle East. In addition, these relationships may eventually displace US influence closer to home—for instance, in Central and South America.¹⁷² The preceding analysis should emphasize such an outcome is not inevitable. To the extent the United States can seize the initiative, the country has political, economic, and military advantages against which adversaries cannot compete. Put simply, the United States remains a more attractive partner to most other states than any of its adversaries do. But leveraging this attraction effectively will require the communication of clear interests, the careful calibration of demands, the fostering of relentless opportunism in the pursuit of advantage and the striking of the right balance between cooperation and confrontation.

171. Eric J. Larson, e-mail message to author, April 28, 2021.

172. Ken Dilanian, Joel Seidman, and Gabriel Sanchez, "A Project in El Salvador Shows How China Is Exerting Growing Power in America's Backyard," *NBC News* (website), September 4, 2021, <https://www.nbcnews.com/politics/national-security/project-el-salvador-shows-how-china-exerting-growing-power-america-n1278464/>.

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