



SMA 21st Century Strategic Challenges

Strategy and Planning for Deterrence and Trilateral

November 2021

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Produced Strategic Multilayer Assessment (Joint Staff, J39)
in support of US Strategic Command (USSTRATCOM)

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Questions of Focus

In July 2021, at the request of USSTRATCOM, SMA¹ initiated an effort to address eight questions regarding the implications of the increasing numbers, and expanding capabilities, of US nuclear adversaries. This report addresses the first of the eight questions.²

Q1: Does deterrence theory change if the US faces two nuclear-armed, near-peer competitors? If so, how? What are the impacts to strategy? If not, what impacts to strategy still exist in that scenario? What are the implications for US strategic defense, escalation control options, and the deterrent value of the nuclear triad? In a game theoretic approach, how can the three-body problem be applied to this scenario?

Methodology

NSI Reachback provides DOD with multidisciplinary and regional expertise in support of ongoing operations. The Reachback team combines written and interview elicitations with additional research and analyses to provide short summary responses to time-sensitive questions. In addition to expert elicitation through NSI's Virtual Think Tank (**ViTTa™**) network, the report also draws on our Survey for Eliciting Expert Knowledge (**SEEK**): a new, online SMA capability for tapping into the collective knowledge, experience, and wisdom of the 5000+ person SMA community of interest to generate crowd-sourced input on targeted questions of interest. SEEK is intended to supplement, not replace, the NSI Reachback reports.

Subject Matter Expert Contributors³

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¹ **SMA Mission:** Strategic Multilayer Assessment (SMA) provides decision and planning support to Combatant and Joint Force Commanders facing complex operational and technical imperatives that require collaborative, multi-agency, multi-disciplinary, mixed-method approaches. SMA's goal is to expand strategic horizons and inform choices that lead to more effective strategy formulation. SMA provides a diversity of thought and opinion by drawing on subject matter expertise from leading academics and practitioners from the public and private sectors globally. SMA activities are accepted and prioritized by the Joint Staff (JS/J-3/DDGO) and resourced by OUSD(R&E)/RRTO.

² For a copy of the eight questions, please contact the SMA office: Ms. Mariah Yager at mariah.c.yager.ctr@mail.mil.

³ The expertise contributed and expressed in this report are those of the subject matter experts and the report authors and do not reflect the official policy or position of the Department of Defense or the US Government.

Strategy and Planning for *Deterrence* and *Triterrence*

This NSI Reachback report is part of an effort requested by USSTRATCOM to the Strategic Multi-layer Assessment Office, Joint Staff (J39). The essence of the question is how to develop an approach for assessing and developing strategy in the current environment. As in all analytic endeavors, the critical first step is diagnosing the problem. Because theory and research on the strategy and policy implications of facing two nuclear-armed, near-peer competitors is very thin, this report offers an initial framework for distinguishing types of deterrence. The intention is not to provide “the” answer but to incite serious discussion and theorizing.

By way of introduction, the first section touches briefly on three variations of deterrence theory to make the case that there is not just one. Section two focuses on problem framing. It discusses the impact on deterrence theory of broadening the (often hidden) bipolar, single adversary assumptions when it comes to deterrence strategy and analysis. It offers a network theory-based framework for differentiating deterrence settings involving two or more peer competitors. This is a particularly crucial exercise for strategists and planners because deterrence objectives and activities change along with the characteristics of the deterrence setting.

Section three lists a number of implications for deterrence strategy highlighted by subject matter expert (SME) interviewees. These are items that teams tasked with upcoming defense reviews should consider carefully. Because theory and empirical scholarship on deterrence of two or more peer competitors is still emerging, the list presents an important set of topics for further study and even the basis for a Three-Peer research agenda. Finally, an appendix contains some comments on value and limitations of game theory for assessing the current international environment and suggestions on other ways to assess three peer deterrence problems.

A word on terminology

two-peer, three-peer

There is not yet a common term for referring to a situation in which the United States (or other state) faces two nuclear-armed, near-peer competitors. In recent policy discussions, analytic assessments, and leader speeches, one can find multiple terms that refer to this situation: multipolar, multilateral, triadic, triangles, 3-body, and multi-actor. However, none quite captures the issue fully if common definitions of the terms are used. For example, *multipolarity* refers to the global distribution of state power in which power blocs stand in persistent opposition. It ignores the transition of diplomatic and political influence, economic strength, and military might from 20th century power centers to other areas of the globe beyond “poles” (e.g., US-Russia-China), and diffusion of power to actors other than major states (e.g., non-state actors, individuals).

Use of the term *multilateral* has the opposite problem: it connotes persistent agreement among actors who cooperate to address a problem. Triadic, triangles, three-body, and multi-actor are not explicit enough and could apply equally to extended deterrence situations as deterrence of multiple peers. Because they are the best-suited to the subject of this report, we use the term **two-peer** to refer to deterrence situations involving two major power adversaries and **three-peer** to refer to deterrence problems involving three major powers.

Does deterrence *theory* change in the context of three peer actors?

Short Answer: No.

The number of peer actors does not impact the basic logic of deterrence embedded in deterrence theory, and there is little reason to believe that most deterrence theories could not be recalibrated to accommodate multiple peer competitors (Danilovic, 2021; Korda, 2021; Zagare, 2021).⁴ The important question is: which deterrence theory are you trying to apply? Though rarely made explicit in deterrence analyses, there is more than one “deterrence theory.” While the theories themselves do not generally change, the strategy/policy recommendations drawn from them may.

Implication: The implications for strategy and analysis **depend on which theory of deterrence is applied.** Just as a picture reflects the lens that was used to view the environment, strategy will reflect the theory used to interpret the operational environment.

Implication: What seems like an objective deterrence strategy is, in fact, a function of the **assumptions of the deterrence theory** used.

More Complete Answer: Though distinct theories of deterrence appear in many disciplines (e.g., criminology, psychology) a core logic underpins each: the threat of loss can influence the behavior of another. Deterrence theories formalize this logic to produce explanation for issues of interest like crime or interstate conflict.

At its core, deterrence is a theory of behavior and how to influence it as well as of using “threats of harm to prevent someone from doing something you don’t want them to do,” (Morgan, 1983, p. 17). Applying this basic deterrence logic to behavior in different circumstances has produced different deterrence theories. Thus, it should come as no surprise that the dominant deterrence theory developed during the Cold War was a two-peer, state-centric model of mutual deterrence. What may be surprising, however, is that with limited exception, this model continues to inform US deterrence strategy and planning in the current international environment. To put a finer point on it, the common understanding of deterrence theory in the United States is concerned with just one means of influencing the behavior of a nation-state or group: threatening unacceptable punishment—generally coercive force—in response to a previously proscribed behavior. Of course, there are other approaches to influencing state behavior including, for example, the long-term effort to shape a potential adversary’s decision environment, which China has pursued.

As shown in Figure 1, slightly different **concerns** about interstate conflict generated two main “classical” **theories** of influence (structural and rational decision) and one newer theory (perfect deterrence). Each theory in turn produces different **implications** for strategy.

⁴ For ease of explanation, the following discusses deterrence problems involving two- or three-peer states, although it is equally applicable to multi-peer deterrence problems. Of course, the more actors are included, the more complex the problem space becomes.

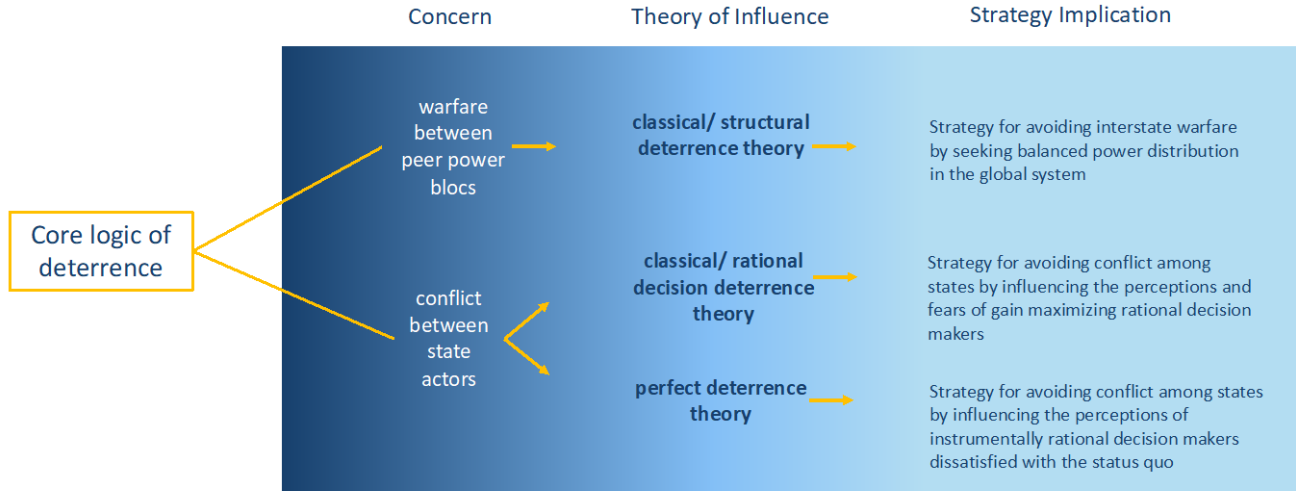


Figure 1. Deterrence theories

Structural theory explains interstate security dynamics as the result of the distribution of power in the international system, most commonly measured as the military might of one state relative to others (Snyder & Diesing, 1977). Influence is exercised by creating fear in your adversary, that they will lose power (primarily military) relative to other actors in the international system. **Rational decision-based theory**, on the other hand, focuses on influencing the calculations of national leaders—inducing a competitor to engage in cost versus benefit calculation. Some form of rational actor model is what most people think of as deterrence theory. Despite questionable empirical support for the idea that a less powerful state will not purposefully engage in war with a stronger one, it underpins US deterrence strategy and doctrine. Documents such as the *Deterrence Operations Joint Operating Concept (DO-JOC)* reflect this theory’s rationalist, two-peer assumptions: leaders are normative decision makers (i.e., profit maximizers) who seek to avoid costs while satisfying national interests and objectives.

In “*Reconciling Rationality with Deterrence*,” however, renowned deterrence and game theorist Frank Zagare (2004) demonstrates the logical inconsistencies and lack of empirical evidence to support classical rational decision theories. In response, he develops a theory of *perfect deterrence* (see also Zagare & Kilgour, 2003) that aligns with observed state behaviors in actual international crises to enhance the theory’s validity and predictive power.

One of the distinctions of perfect deterrence theory is that it explicitly adds an opponent’s threat capability and credibility, and its orientation to the status quo, as explanatory factors of deterrence effectiveness. Consequently, a challenger’s decision calculus accounts for not just the costs and benefits of taking a sanctioned action (rational decision-based deterrence) but the cost of concession as well (the opponent’s satisfaction with the status quo if a deterrent threat is enacted versus if it is not). Satisfaction with the status quo is an indicator of both resolve and the role an actor may be willing to play in a conflict. As Zagare (2021) explains, “If you have

one dissatisfied state, two dissatisfied states, three dissatisfied states, then things get dicier as dissatisfaction spreads.”

Because Zagare posits a new theory, it is not surprising that the implications differ from those of classical theory. For example, both types of classical theory (structural and rational) imply that increasing the numbers of nuclear weapons will always increase the cost of war. For each actor, greater power to punish— overkill in fact—is always better. In contrast, perfect deterrence theory (Zagare, 2008) suggests that a minimum, or sufficient, threat of retaliation is stabilizing.

The upshot is this: the applicability of deterrence theory depends on which theory we are talking about, but we can say that the logic of deterrence, the basic proposition, is sound. Moving from a two-peer to a three-peer problem alters the structure of the deterrence problem, which raises new considerations that are often ignored or assumed away in two-peer deterrence analyses. As a result, strategists and defense policy reviewers must be clear on which theory of deterrence they are applying and, ideally, consider which policy implications they draw are particularly sensitive to the theory used. One approach would be to **employ a hedging strategy against the theories**: apply multiple theories in deterrence analyses to identify the strategy recommendations that are suggested by each theory. A **comprehensive, comparative analysis of the strategy implications of different theories** in the context of three- to multi-peer integrated deterrence would be a useful resource to guide and save the time of planners and strategies.

What *does* change when the United States faces two nuclear-armed, near-peer competitors?

Short Answer: The structure of the deterrence problem.

The 3R’s—**relationships** among actors’ interests, **role**, and **resolve**—determine the structures of three-peer deterrence problems (i.e., conflict or crisis). Adding a third-peer actor changes the structure and increases the types of deterrence problems from one when two-peers are involved, to four when three-peers are involved.

Implication: Critical **information required** to accurately characterize and understand the deterrence problem are both different and considerably greater when there is a possibility of three-peer conflict.

Implication: Accurately distinguishing among types of deterrence problems is imperative to limit the chances of **inadvertent escalatory responses**.

Implication: **Deterrence**, like other forms of influence, is a **competition for influence** when more than two actors have stakes in an issue. Whether this realization reflects a new deterrence paradigm, or can be accommodated within the current one, is a question with potentially wide-ranging implications for defense planning and analysis.

More Complete Answer: In recent remarks to the SMA community of interest, USSTRATCOM commander ADM Richard remarked on the multi-faceted deterrence problem the United States faces: “to deter two-peer nuclear capable potential adversaries, at the same time, who have to be deterred differently.” Unfortunately, the problem is even more complex than deterring two adversaries in different ways at the same time.

This is because the major impact of moving from two-peer to three-, or multi-peer deterrence is not simply numeric, but structural. Adding another potential adversary or partner produces a deterrence problem that has types: different properties than when two peers face each other. Adding a third peer actor introduces processes such as coalition formation and cohesion, competition for influence, and intervention strategies.

Another word on terminology
deterrence problem

Because the following discussion deals primarily with the structure rather than the details of different deterrence settings, we use the term **deterrence problem** to distinguish this from a deterrence *scenario* that suggests details about a specific setting. We also use deterrence problem as a broad term to describe *destructive competition: crisis* or warfare in which deterrence is a security objective.

Triadic relationships have a unique place in social theory; they are one of the most basic forms of social grouping—the initial social network. Balance Theory, a theory of human behavior that postulates that humans seek balance in relationships with multiple others, has been used to explore the stability of triads within their social contexts. Empirical research on alliance and conflict relationships among nation-state triads by Maoz, Terris, Kuperman & Talmud (2006) and by Kuznar & Astorino-Courtois (2017) on the network of actor interests regarding Daesh and the Syrian Civil War suggest a framework for analyzing three-peer deterrence problems. Unlike the substantial literature on “three-party” extended deterrence, work on deterrence problems in which three or more peer actors may be involved remains remarkably thin.⁵

Why is knowing the structure of a deterrence problem important? Because, the nature of threats, deterrence objectives, and, therefore, appropriate deterrence options change according to the structure of the deterrence problem.

The 3R’s: A framework for diagnosing deterrence problems

The structure of deterrence problems is determined by three factors: the patterns of *relationships* among actor interests and agendas, the *roles* that they prefer to play, and the relative *resolve* of actors toward possible crisis outcomes. Focusing on the *numbers* of potential opponents tells us little if we do not also know the ways in which those players relate to each other. We can think of the *relationships* among actor interests as each actor having one of the following with reference to a particular issue or conflict: either no interest or stake sufficient to participate (0),⁶ an independent agenda from others (i), complementary interests with at least one other (+), or conflicting interests with at least one other (-). The *roles* each can play reflect how an actor prefers to

⁵ While they do involve three or more actors, extended deterrence problems are distinct from three-peer deterrence. This can be a source of some confusion as there is a substantial body of research on “three actor deterrence” focused on a major power’s deterrence commitment to defend a protégé, or weaker partner, against a common adversary. The power dynamics, credibility issues, and capacity for independent action distinguishes extended deterrence from deterrence problems involving three major, nuclear armed peer competitors. For a good start with more recent works on extended deterrence see Danilovic, 2001, 2002; Zagare & Kilgour, 2003; Zagare & Kilgour, 2006; and Quackenbush, 2006.

⁶ Though the US, China, and Russia are highly politically relevant to each other (Maoz, 1996), and likely have stakes involved in most issues involving the other two, we do not assume *a priori* that all there will be a perceived stake by each of the three in all circumstances.

participate: either as a by-stander outside the conflict, as an opportunistic by-stander happy to remain out of the fray but watching for an opportunity to satisfy other interests, as a limited or indirect participant, or as a full, direct participant. Finally, each actor may have different levels of *resolve* relative to the outcome of the conflict (Maoz, 1983).

As Figure 2 illustrates, one implication of differentiating deterrence problems according to structural characteristics is immediately apparent: just because there are two or more potential peer challengers does not mean that the United States will face a three-peer deterrence problem in every case. In an environment in which resources are finite, an essential precursor to strategic planning is identifying the range of deterrence situations the United States will face.

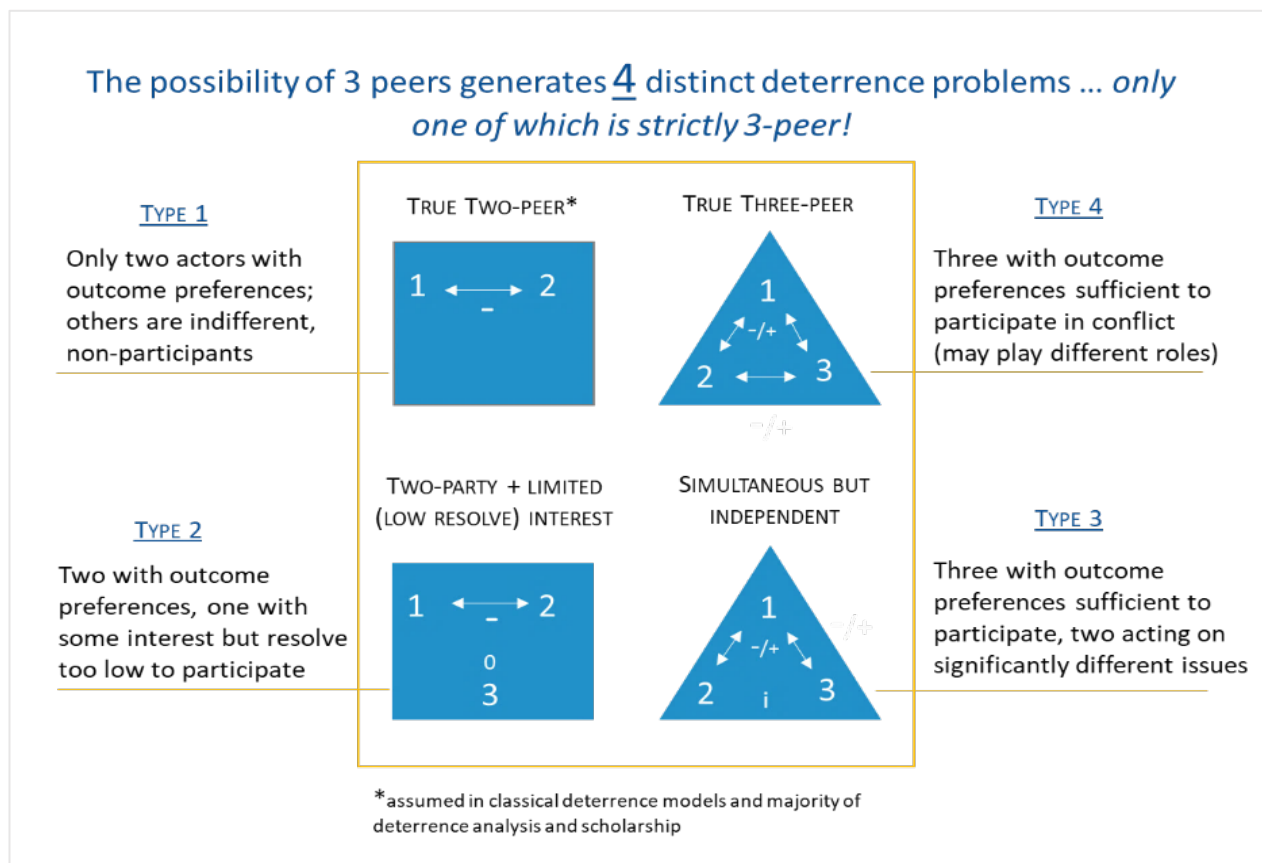


Figure 2. Deterrence problem types

Failing to differentiate among Types 1-4 deterrence problems (i.e., planning on the assumption that United States, Chinese, and Russian interests can only be in perpetual conflict: that each is a direct participant and has high stakes and resolve in every circumstance) biases US strategy toward the conflict end of the cooperation-competition-conflict continuum.⁷ Mistakenly responding to a competitor as if its actions were always precursors to conflict could appear unnecessarily and surprisingly aggressive and disproportionate and may destabilize an otherwise stable environment or provoke the escalation they were intended to avoid.

⁷ The structural characteristics of two-peer deterrence problems are very often assumed, although not always recognized: The relationship between the interests of the parties is, by definition, conflictual. Each is a participant with sufficient resolve to join a conflict. Once a possible third peer is added, however, these assumptions are too restrictive. That these assumptions have become ingrained in US defense concepts and strategies may be one reason why US defense strategists and planners are struggling with efforts to accommodate cooperation and competition along with conflict.

It also is incompatible with the Joint Competition Concept (JCC) and Interim National Security Strategic Guidance (INSSG), both of which include the prospect of cooperation and competition, as well as conflict, with these states. It is one thing to assume a true three-peer conflict for worst-case planning. However, assuming that every deterrence problem will always involve three, nuclear-armed actors will skew assessments of the actual security environment.

The differences between the four deterrence problem types can be illustrated with reference to a notional Chinese aggression against Taiwan:

TRUE TWO-PEER



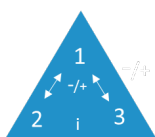
Type 1: True two-peer conflict: Assumes a conflict that involves the United States and China only. The deterrence problem for the United States is to deter Chinese aggression against Taiwan.

TWO-PARTY + LIMITED (LOW RESOLVE) INTEREST



Type 2: Two-peer conflict plus another with limited interest: A US-China deterrence problem with Russia as an opportunistic by-stander, therefore, with some probability that it will decide to participate. There are now two distinct deterrence problems to balance: deterring Chinese aggression and deterring a Russian decision to join in either for its own purposes or as a partner with China.

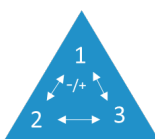
SIMULTANEOUS BUT INDEPENDENT



Type 3: Simultaneous but independent conflicts: While three players are in conflict, in actuality, this situation is two separate, two-peer problems co-occurring (for example, the US-China deterrence problem on Taiwan concurrent with a US-Russia deterrence problem involving interference in Ukraine). In addition to deterring Chinese aggression against Taiwan and Russian interference in Ukraine, there is a potential third deterrence problem: making sure that Russia and China do not

coordinate what would otherwise be separate efforts in order to maximize mutual gain against the United States.⁸ Unlike Type 1 and Type 2, in which role is assumed, the criticality of the threat associated with a Type 3 conflict, and thus appropriate deterrence options, can change depending on which roles the challengers choose.

TRUE THREE-PEER



Type 4: True three-peer conflict: Three participants involved in a single conflict. This type can take many forms because players may not participate equally, simultaneously, or all in the same way (see Appendix B for six varieties of Type 4 conflict based on interest relationships). In the Taiwan example, the deterrence problem for the United States might be deterring Chinese aggression as well as Russia providing ISR to China. Or, it might be deterring Chinese aggression against Taiwan and Russian attempts to block US ships from entering strategic sea lanes. Note, however, that a true three-peer conflict could also involve multiple forms of US-Russian coordination to deter Chinese aggression against Taiwan. Note that adding the relationships among actors' interests among the three-peers creates six variations of the basic Type 4 structure as shown in Appendix B.

⁸ Game theory and deterrence scholars Frank Zagare and Jacek Kugler suspect that the balance of cases involving the US, Russia, and China would actually be of this type (Type 3) rather than True Three-player games in which, for example, Russia and China act together.

When does a two-peer conflict become a True Three-Peer conflict?

There are three conditions for a Type 4 (True Three-Peer conflict) to occur: 1) at least two actors have conflicting interests, 2) at least two are participants, 3) each actor perceives that it has greater than zero stakes in the issue. Even in a Type 4 conflict, actors that choose to cooperate to oppose a third will also have interests that are tangential to the main issue of the conflict. Consider the notional conflict regarding Taiwan: even if China and Russia were to align on the common interest of blocking US military action in the region, there is no reason to assume that they would ignore interests that may not be at stake in the conflict. Discovering the interests on which actors might align in a particular context, as well as those that could overcome any alignment, is arguably the most critical information requirement that strategists, operational planners, and crisis planners will require. As Blaney and Soper (2021) note, “you can't just simply say, ‘Oh let's treat China and Russia as one player,’ because they're not a monolithic group ... even if there are alliances, and some incentives are aligned, there's definitely some selfish or self-interest at least driving their strategic behavior.”

Yet another word on terminology
challenger, defender

For ease of explanation, we adopt the standard convention of referring to the actor to be deterred as the **challenger**. The actor interested in deterring the challenger from taking particular actions is the **defender**.

There are a number of factors that planners and strategists should consider when assessing the risk of a counter-coalition forming, or the potential to form a coalition against a common adversary (e.g., from the US perspective these might be China and Russia working together against United States or the United States and China working together to deter Russia). The first factor is motivation: are there common interests among the actors? Another is the expected value-added of collective capability. In other words, which forces and capabilities will the cooperating actors bring against the remaining one? How complementary are these, and how might they be used together both in terms of cost imposition and damage-limitation? Finally, how likely are the cooperating actors to follow through? This will be influenced both by the role each actor is willing to play in a particular setting and their relative resolve. For peer actors to form a cohesive coalition against a third, the level of resolve⁹ should be equivalent—even if not in the same domain or on the same interest (Blaney & Soper, 2021). The more cohesive a coordinated effort is—whether formal alliance or relationship of convenience—the more credible its deterrent message will be.

Is there strength in appearing weak in a Three-Peer conflict?

There is a sliding rule of peer power. Below the level of armed conflict, the United States is arguably the weaker peer (see IJJO Integration Report, 2021) with fewer proportionate deterrence options (one reason the United States finds gray zone conflict so frustrating). In unlimited conventional conflict, US capabilities outrange those of Russia and China who are the weaker peers in this space. The United States, China, and Russia are most closely peers in the context of nuclear conflict (thus Russia's declared “escalate to deescalate” policy). Interestingly, analysis of the United States, Russia, and China as a *truel* (see Appendix A for an explanation of *truels*) suggests that if it is seen by Russia and China as the single, weaker actor below the level of armed conflict, the best strategy for the United States is not to escalate to where it has an advantage. If they do not fear the United States as much as each other, the optimum Russian and Chinese strategy is to turn their gray zone weapons on

⁹ Resolve reflects an actor's sensitivity to the cost (e.g., conflict, restraint, reputation) of an outcome against its interests.

each other. In the context of conventional warfare, Russia and China, both weaker actors, are incentivized to combine capabilities against the stronger United States. Finally, if a crisis has escalated to the point at which nuclear use is seriously considered, each is sufficiently strong to deter the other with minimum deterrent forces. Ultimately though, the “winner” is the actor that can by-stand while the other two fight (Archetti, 2012; Lampier, 2018).

Applying the framework: *Notional* Taiwan self-determination example

The prevalent approaches to deterrence analysis and planning would see the threat of Chinese aggression against Taiwan as imagined in this example one of two ways: 1) as a two-peer (Type 1 US-China deterrence problem) or 2) as an extended deterrence situation in which the United States guarantees the safety of Taiwan against Chinese aggression. Neither is an accurate depiction of the deterrence problem, which is a pretty simple Type 2 (Two-Peer conflict plus another with limited interest).

As shown in Figure 3, considering the 3R’s helps to generate a more precise picture of the operating environment, which can accommodate multiple peer actors that play different roles in a crisis or conflict with different levels of resolve toward the outcome of the conflict. In this example, the United States, Taiwan, and China have chosen a “participant” (P) role with the United States and Taiwan as defenders and China as the challenger. Japan has a role as an interested by-stander (B-S), and North Korea and Russia are by-standers

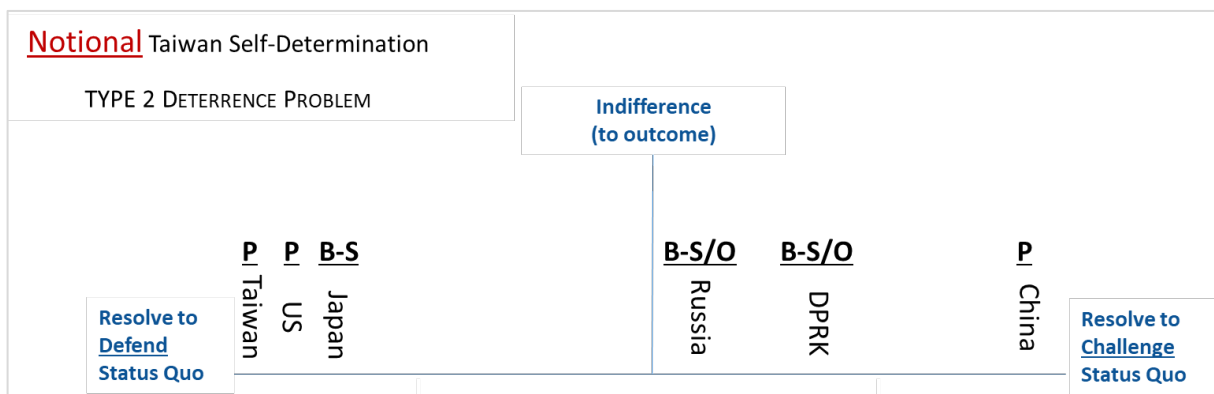


Figure 3. Application of 3R's to assess a notional deterrence problem

looking to exploit the situation (B-S/O) if possible. In terms of resolve, Taiwan, the United States, and Japan each have high *resolve* to defend the status quo (indicated by position on the x-axis relative to the y-axis (indifference)). China is highly resolved to challenge the status quo. Russia, the third peer, is shown as a bystander for the time being and close to indifferent to the outcome of the conflict. North Korea, also a nuclear state, believes itself to have more stake in the conflict. Note that the *relationships* among actors' interests is not shown here but can be estimated from the co-location of the United States, Taiwan, and Japan that their interests are not conflicting, and from the position of China that its interests are in conflict with these three.

Why is identifying the 3R's for each actor in a deterrence problem important for planning?

It is because the deterrence threats, objectives, and, therefore, appropriate deterrence options (including looking for coalitions) change according to the relationships among actor interests, the roles each actor prefers

to play, and its relative resolve to defend versus challenge the status quo. The differences in US and Chinese influence objectives are shown in the expanded version in Figure 4.

One thing that should be immediately clear from the figure is that influencing the actions of others in the context of a multi-peer, multi-actor conflict is not a monologue. It is an on-going competition for influence—a conversation. One retired senior military leader consulted for this effort (2021) makes an essential point about strategic security paradigms: the US and Russian conversation has been tested over decades of interaction, negotiation, and learning. That history is missing with China, so it is less clear how each understands that conversation. This makes it all the more important to study Chinese and other competitors’ interests and resolve—variables that must not be assumed as to be static— carefully *from the competitor’s (subjective) perspective*.

Referring again to Figure 4, note that both the defender (United States) and challenger (China) have deterrence objectives and tasks aimed at each other and at by-standers. As shown, the defender wants to encourage cooperation (however defined by the circumstance) among co-defenders or actors that are indifferent but whose preferred outcome is closer to the status quo. The challenger has the opposite objectives, also depending on what it believes about the interests, roles, and resolve of other actors.

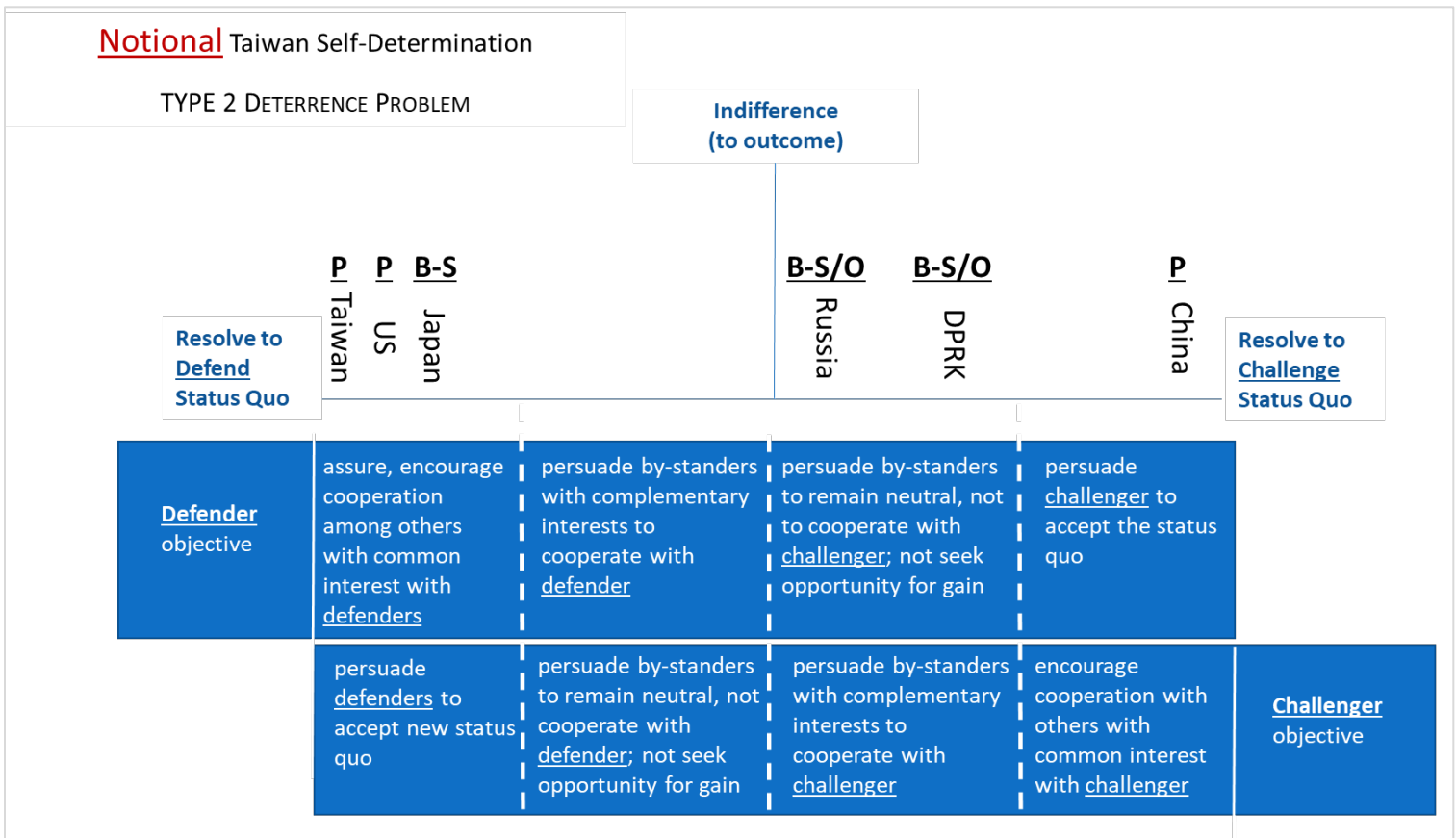


Figure 4. 3R's Example showing deterrence objectives

Rather than deterrence “tailored” to an adversary’s capabilities and intent, the framework suggests “specialized deterrence” based on a competitor’s interests, role, and resolve via a vis a particular issue or outcome. This will require a different mindset with regard to developing deterrence strategy and policy. It not only shifts the type of critical **information required** to characterize and understand the deterrence problem, but requires deterrence assessments to engage in testing and comparing the strategy implications of a wide range of possible structures that might emerge in a particular deterrence setting.

While the basic feature of deterrence strategy may still be threatening with punishment, one implication of multi-peer deterrence problems in which actors can, and do, take on roles other than direct participants, is that the utility of offering positive incentives (“carrots”) increases depending on the deterrence problem type as well as the roles and resolve of participating actors. In any conflict situation, seeking to influence behavior by communicating only deterrent threats offers a challenger very little information about the defender’s bargaining range (Danilovic, 2021): that space in which the defender and challenger might find enough overlap in preferences that de-escalation is a possibility, even if neither side is willing to compromise on its vital interests. Simply threatening gives an opponent no sense of whether and which “off ramps” its adversary may be willing to negotiate about. Explicit inclusion of the requirement to explore bargaining ranges implicated in deterrence situations is one way to update that thinking to align with the 21st century operational environment in which conflict and deterrence threats will coexist with cooperation and competition among the same actors.

What are the implications for US strategic defense?

There are many topics with implications for joint competition and warfighting that demand significant consideration, formalized theorizing, and testing to support US strategy. Multi-peer deterrence has simply not received the attention required to arrive at robust conclusions. As a result, the following topics are provided to suggest important areas for further study. They can be used as prompts for discussion, as thought-experiments, and, ideally, as the foundation of a broad, forward-looking research agenda on Multi-Peer Deterrence.

[Implication: The “integrated deterrence” concept could be outmoded before it matures.](#)

The upcoming defense reviews (e.g., National Defense Strategy, Nuclear Posture Review) will address integrated deterrence across military domains (nuclear, conventional, cyber, information, etc.) as part of the larger integrated deterrence effort. The multi-domain focus of “integrated deterrence” is a significant step forward in the approach to conventional and nuclear deterrence of serious interstate conflict. It will take advantage of the full range of US defense assets. However, it begs the question of whether it is best-suited to deter states, such as China and Russia, that do not distinguish between military and other coercive capabilities the way the United States does, and are in fact incentivized to avoid operating in ways that play to US conventional strength. Combining forces in various domains (which is the gist of integrated deterrence) is essential for imposing costs on obvious, large-scale military activities.

As such, an integrated deterrence concept that stops at the doors of the Pentagon is unlikely to have a major impact on how US adversaries already view US military prowess. US military dominance and capability to inflict punishing retaliation is not a question of debate anywhere in the world. In fact, it was a critical factor in development of Chinese and Russian strategies to employ non-military levers such as trade relations and commercial interests.

Integrating deterrence planning **across executive departments** is the only way to craft proportionate, flexible, and effective deterrence options capable of countering the full range of Chinese, Russian, and other adversary coercive assets. Particularly with China, until a crisis situation has escalated to serious armed conflict, very little of what motivates the Chinese Communist Party (CCP) government can be addressed by US military operations. US capability to survive a “first strike” against financial and commercial communications systems, energy supplies, and distribution infrastructures, and respond in kind, does far more to increase the credibility of US deterrent threats than even a low yield nuclear weapon. Defense or damage limitation for such targets would, however, require coordination with federal agencies. To be credible, and for integrated deterrence to have any impact against the US main targets, financial and other sources of leverage and deterrent influence would also need to be included in national security planning.

Implication: The current deterrence paradigm may not be suited to a future with many “peer-like” threats. Cordesman and Hwang (2020) argue that “the possible impact of that *n*th country’s nuclear forces” must be considered in any deterrence planning and analysis. However, the issue is broader than nuclear proliferation to additional states; there are many other ways than nuclear forces for state and non-state actors to become peer, or “peer-like,” threats to the United States and its allies. For example, as technological advances in cyber, space, micro-biology, and other domains become more widely available, the numbers of potential challengers, not necessarily nuclear states, but actors with devastating weapons of mass effect, will rise. The distinctions between peer and “non-peer” deterrence problems currently embedded in US strategic thinking will disappear. In short, an operational environment in which there are scores of “peer-like” actors that the United States cannot dominate in every circumstance, raises a truly novel strategic dilemma and challenges the applicability of deterrence in a way that assuming three- or four-peers does not. What are the implications for US defense strategy and policy of a world in which the United States may face 20 or more peer-like actors?

Implication: The military can readily communicate US deterrence capability, but not its resolve.

In its most general form, deterrence theory rests on the assumption that it is possible for a defender to accurately communicate its intent to deliver a punishing response if the challenger chooses to take a specified prohibited action, and that this message can be made credible on two counts: that the opponent believes that the deterrer possesses both the capability and the will to respond when and how it has indicated (i.e., that the threatened consequence will occur in the event that deterrence fails).

National capabilities can be demonstrated and displayed. A stated deterrence policy can be repeated. Credibly communicating US resolve to enact a deterrent threat is clearly the weak link. In the United States, both civilian and military departments have a role in communicating US deterrence policy and intent. However, the burden of persuading potential challengers that the United States has the political will to enact these threats, lies firmly outside the DoD. This is because national resolve is a fundamentally political issue. Moreover, in the United States, the decision to use military or other coercive force is taken by civilian leaders. As a result, military activities (e.g., exercises, weapons demonstrations, force postures, and the like) and statements by senior commanders can only serve to reinforce the possibility that the United States will act on a deterrent threat. Another way of looking at it is that lack of credibility leading to challenger miscalculation—a potential source of deterrence failure—is not controlled by the Pentagon but by the statements and actions of diplomats, the White House, and the preferences of the American people.

Implication: The most immediate threat to US security is not intentional use of nuclear weapons, it is misunderstanding and miscommunication with competitors.

An SMA SEEK¹⁰ was conducted to survey the vast SMA community on the likelihood that, within the next fifteen years, the United States would be involved in a conflict with Russia or China. The response was not overwhelmingly optimistic: overall, nearly 30 percent believe that there is a greater than 45 percent chance. Twelve percent thought that there was over a 60 percent chance. The SMEs interviewed for this report were asked what might set off a nuclear conflict in which the United States, Russia, and/or China were participants. They were much less pessimistic about the chances of this type of conflict occurring, but were in close agreement that if it did, miscalculation and miscommunication would have been the cause.

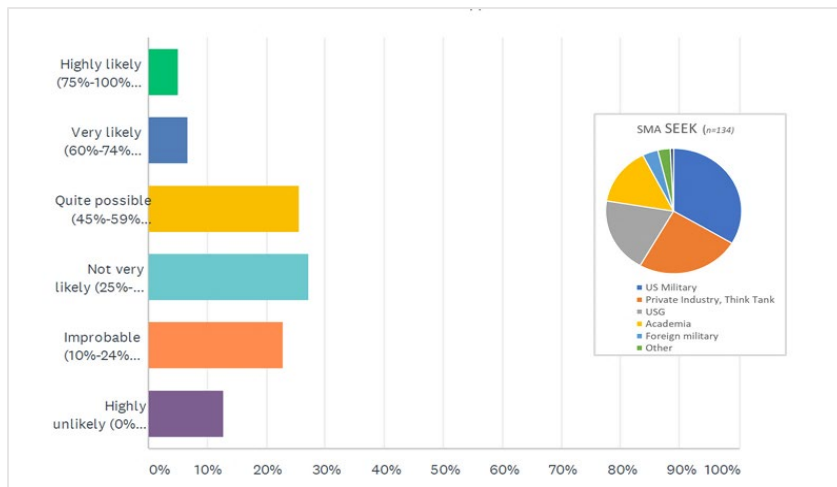


Figure 5. SEEK results, SMA COI expectation of likelihood of US, PRC, Russia nuclear conflict within 15 years

Implication: Is communicating ambiguity about deterrence response stabilizing? It is unclear.

One of the foundational assumptions of deterrence theory is that there is communication between the sides such that the challenger hears, understands, and believes threats as the defender intends them and that the defender can detect that this is the case. It is also generally presumed that each side understands its adversary's values and cost-benefit calculations as well as his willingness to take risks (Astorino-Courtois & Borda, 2008). While it has long been argued that some ambiguity about intent and control enhances the credibility of nuclear deterrence threats, as the deterrence problem becomes more complex, it is unclear that ambiguity would have other than a destabilizing effect by raising the risk of misperception and unintended escalation. In addition, a three-peer deterrence problem introduces uncertainties that are generally assumed in US strategy, like who is the intended target of the communicated deterrent threat? And who, if anyone, is aligned against whom?

Better understanding of the global, regional, and domestic political interests and challenges facing China and Russia will decrease the potential for miscalculating their threat perception or resolve. In addition, Korda (2021) argues that defense modernization and acquisition decision makers must look critically at proposals for rapid response/damage limitation systems that increase the risk of miscalculation or bias decision makers toward precipitous launch in a crisis. Finding the balance between nuclear weapons capability, missile defense, and damage limitation efforts (hardening) is crucial.

¹⁰ SEEK is a new, on-line SMA capability for tapping into the collective knowledge, experience, and wisdom of the 5000+ SMA community of interest to generate rapid turn-around, crowd-sourced input on discrete questions related to national security. See Appendix C for additional SEEK results.

Implication: The role and meaning of ‘mutually-assured destruction’ (MAD) in US defense policy requires revision.

Once US and Soviet nuclear arsenals had reached the point at which each could deliver unacceptable retaliatory strikes to the other in the event of nuclear use, this mutually assured destruction (MAD) was seen as an essential source of strategic stability. US nuclear strategy still assumes its stabilizing effect on deterrence, and force posture and acquisitions are still guided by it. Nevertheless, Golov (2014) points to changes in the international system that portend a less stable future. The incredible density of international financial, trade and supply-chain, cyber, communications, etc. dependencies today is the key factor that distinguishes international relations today from just 30 years ago, not to mention relations between the US and Soviet poles of the Cold War era.

MAD is pretty crazy in a two-peer deterrence situation. In a three-peer conflict, it is even more difficult. First, conflict among three nuclear armed peers means that, in theory, any two in combination should be able to deter the third. The only way to avoid being the one whose behavior is being deterred is either 1) to be part of the coalition or 2) to exceed the combined capability of the two and/or have impenetrable defenses such that even together they are unable to levee MAD threats. Working to achieve either would be a recipe for a devastating arms race if the domain was only nuclear. Today, however, there are other, non-nuclear and even non-kinetic ways to “assure” the destruction of an adversary. Paradoxically, the same international economic and environmental dependencies that undercut the credibility of MAD-based deterrent threats stabilize multi-player conventional and nuclear deterrence. Because of these interdependencies, there is a greater potential for a “cascading effect that increases the likelihood that you're going to have a breakdown in strategic stability between certain countries and then that cascades into a similar breakdown between other countries” (Korda, 2021).

Finally, though it is not directly associated with the number of peers in a deterrence problem, the impact of climate change on the credibility of nuclear threats, as well as the moral and legal foundations of US nuclear deterrence policy should also receive careful consideration and so is included here.

Implication: The lessons from climate science are broader than security infrastructure protection; they erase the distinction between counterforce and countervalue policies.

While not attributable to the numbers of opponents in a deterrence setting, improved global awareness of climate science and the impact of human activities on the climate has made it, as Matt Korda (2021) observes, “impossible to ignore the environmental effects of what would happen if even a single nuclear weapon went off.” To date most discussion of climate change as a national security issue has focused on the limiting effects on the US ability to deploy its weapons, (e.g., the vulnerability of command-and-control assets to flooding, etc.). Building and maintaining durable infrastructure is an important feature of deterrence credibility and capability. However, there are (at least) two additional implications of a degraded global environment that have gone underappreciated in security planning: 1) the potential to exacerbate conflict between nuclear states, such as confrontations in an ice-free arctic or over altered physical landscapes in contested areas like Kashmir; and 2) increasing popular awareness of environmental impact studies indicating that even a limited nuclear exchange (i.e., 100 Hiroshima-sized nuclear bombs) would introduce so much soot into the atmosphere to create a ‘nuclear winter’ in some regions. The effect however would not reverse global climate change but would accelerate it by “eventually depleting the protective ozone layer by 40% over many portions of the earth” increasing the severity and frequency of extreme weather events like devastating floods, droughts and storms. As a result, scientists estimate that “most of the world would be unable to grow crops for more than five years,” (Jah, 2006). In addition to increasing domestic opposition to nuclear use (self-imposed cost), the impact on populations around

the globe, not just in the targeted force, or population, effectively erases any distinction the United States may try to make between countervalue and counterforce policy. The global “climate abnormalities” that would result from even a 1940’s sized nuclear blast would effectively make any nuclear use countervalue—even if intended as counterforce.

Given the rate at which a major nuclear conflict involving multiple, large-yield, lower atmosphere detonations would become self-defeating, it is simply not credible—tripwires or not—that those states would engage in prolonged nuclear confrontation. The result is that if it were to occur, any nuclear use would be significantly limited in time and weapons used. Such an assumption has clear impact on the calculation regarding the numbers of weapons included in any posture.

Appendix A. Note on analytic approaches: Three- to multi-player games and truels

In a game theoretic approach, how can the three-body problem be applied to this scenario?

Short answer: Game theoretic assessments of two-player deterrence situations are still useful if the question is appropriate to that method (i.e., interaction among strategies, equilibrium points). Once games move beyond three players or two strategies, they can become unwieldy. N-player problems may be better explored by network theory, or truels, in the event that the question has to do with the equilibrium outcomes of the interactions of three players with limited strategies acting either sequentially or iteratively. Once questions are asked about state interests and intent, subjective decision analysis with relaxed rationality assumptions would be the better analytic choice such as that employed in the *Deterrence Analysis & Planning Support Environment* (Astorino-Courtois, 2007).¹¹ For a comprehensive review of these and other analytic models and approaches applicable to three-peer deterrence problems, see the response to USSTRATCOM *Question 8: Guide to Analytic Techniques for Nuclear Strategy Analysis*.

More complete answer:

Game theory is useful for exploring interactions among discrete and simple strategies in problems involving a small number of players—most generally two. However, a three-player game is relatively simple to construct as shown in the notional assessment of an emerging crisis after a Taiwanese declaration of independence. In this instance, we can presume the United States is sensitive to a failure to assure its allies (i.e., a threat to credibility of its extended

Normal form 3-player complete information game

		US		
		Mount Significant Military Defense of Taiwan	Diplomatic Demarche of China	
		Russia		
		Stay Neutral but look for opportunities to gain from the situation	Support China Militarily	Stay Neutral but look for opportunities to gain from the situation
China				
Armed push for Unification	C7, R7, U7 2-way confrontation	C5, R8, U8 3-way confrontation	C1, R4, U5	C2, R3, U6 Nash EQ
Accommodate Taiwan independence	C8, R6, U1	C6, R5, U2	C4, R2, U3 Coop outcome	C3, R1, U4

deterrence commitment and a loss of influence). Chinese President Xi Jinping prefers to leave a legacy of unification before he leaves office and is confident in Chinese regional defenses. Russia has two possible strategies: remaining neutral while looking for opportunities to exploit or participating fully on the side of China.

In this assessment, China has a dominant strategy (i.e., it gains more by pushing for unification regardless of what the United States or Russia choose to do). There is a single Nash equilibrium (a point from which no actor has an incentive to defect) at which the United States concedes to China's push for unification and Russia joins

¹¹ The Deterrence Analysis & Planning Support Environment (DAPSE) is a step-by-step tool for guiding deterrence planners through the process of subjective decision calculus analysis for deterrence planning. It is the output of an SMA project for USSTRATCOM J5.

China. Of course, this outcome involves no fighting as the United States would only have issued a diplomatic statement. The fully cooperative outcome (China accommodate; US demarche; Russia neutral) is not stable. Only China prefers three-peer to a two-peer confrontation.

Application of games theory quickly becomes unwieldy and difficult to interpret once four or more actors and multiple strategies are involved. As preeminent game theorist Frank Zagare (2021) explained, “multi-player games become complex, with multiple solutions and overlapping equilibria.” Game theory is intended to assess the structure of a situation and (simple) strategic choice and so does not necessarily provide specific policy assessment or actionable information.

Zagare (2021) allows that using current game theoretic approaches to a US-PRC-RU problem would require “re-calibration” but that it could be done. In fact, Blaney and Soper (2021) point to work in computer science that may be the better fit with the current competitive environment than how game theorists have typically treated deterrence questions. Rather than creating and analyzing math models, work in computer science and data science (e.g., artificial intelligence and machine learning), if applied to questions of strategy and deterrence could be helpful in terms of solving complicated games.

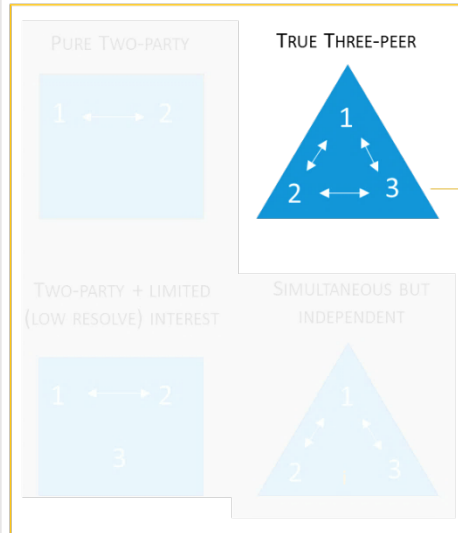
Deterrence truels

One way to imagine the “three body problem” is as a duel between three players, or, a *truel* (see Kilgour and Brams, 1997; Brams, 1994; Kilgour, 1978). Truels are conflict games in which players with different probabilities of hitting their target (i.e., different potential power over outcomes) are involved in a three-way fight in which each player wants to be the sole winner. Each has a single gun and so must strategize about which of its opponents to shoot first. Truels are studied as either finite or sequential games. In the finite game, the best strategy for each player is to target its strongest opponent (i.e., the one most likely to shoot and kill that player), then having taken care of that threat, turn its sights on the weaker of the two. One paradoxical outcome is that the weakest player is the most likely winner.

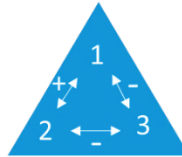
A duel is an armed conflict between two actors. Disallowing shooting into the air, or refusing to shoot, each has a single strategy: shoot to incapacitate the other. Because it does not involve interactions between actors with at least two possible strategies, a duel is not strictly a “game;” the outcome depends only on who is the better shot, not on the choice of strategies. Once a third participant is added, the duel becomes a truel and actors must strategize about which of the other two actors to shoot first, i.e., it has two strategic options. Analyses of truels has demonstrated an interesting outcome of the three-party structure plus a maximizing (rational) strategy: the actor thought by others to be the weakest is the most likely to survive a three-way conflict (Archetti, 2012; Lampier, 2018). Cordesman and Hwang (2020) offer an important qualification in the context of a nuclear contest, referring to the “winner” of a nuclear conflict between the United States, China, and/or Russia will simply be the one with the “fewest dead and dying.” However, even the winner would have lost so much that the end result will be indistinguishable from defeat. Thus, there is an incentive for any third actor to stay out of a nuclear or similarly devastating conflict between the other two.

Appendix B. Type 4 Deterrence problems once interest relations are added

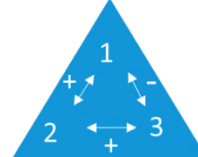
Variations of Type 4 (True Three-Peer) deterrence problems with interest relationships



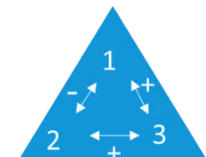
The enemy of my enemy
is my friend



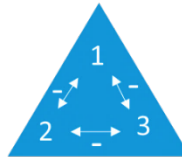
The friend of my friend is
my enemy



The friend of my enemy
is my friend



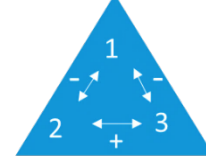
The enemy of my
enemy is my enemy



The enemy of my friend is
my friend

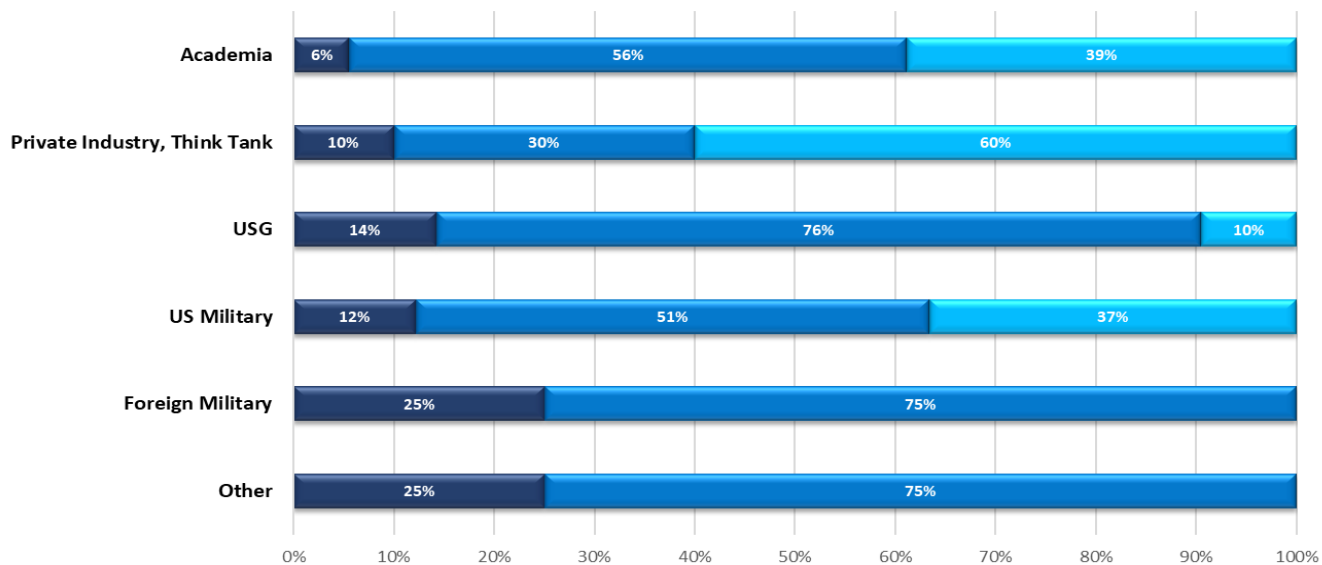


The friend of my enemy is
my enemy

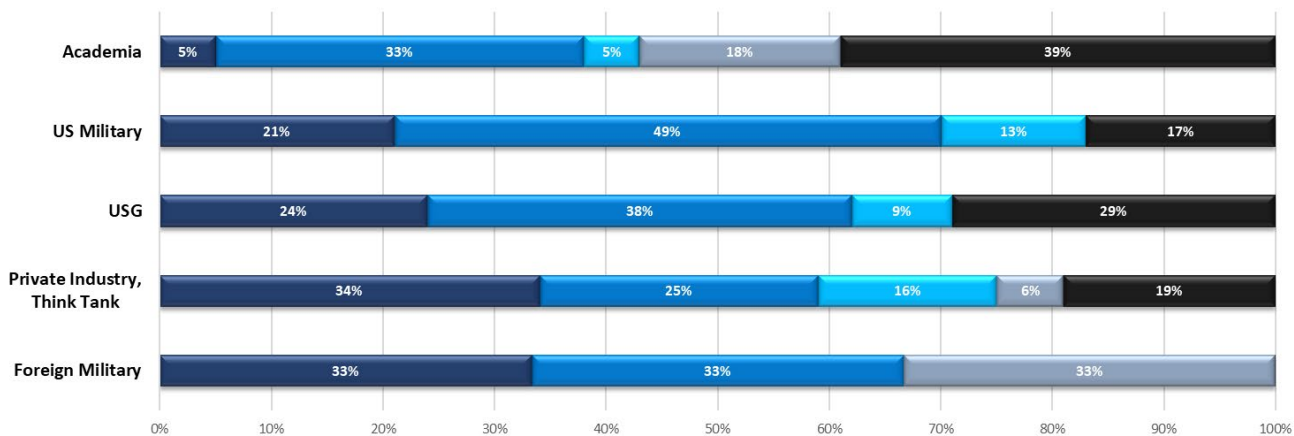


Appendix C. SEEK results

Perceived Likelihood of US-PRC or US-RU Nuclear Conflict Within 15 Years by Affiliation (% of affiliation; n=118)



US Nuclear Posture by Affiliation (% of affiliation; n=118)



- **PRC + RU**
 The US must possess a nuclear force capable of delivering retaliatory strikes against simultaneous Chinese and Russian nuclear attack, even at the expense of fueling a serious three-party arms race.
- **Expansion Beyond Present**
 The US does not need a nuclear force capable of delivering retaliatory strikes against simultaneous Chinese and Russian nuclear attack, but it will need to expand its nuclear force beyond current levels in order to deter both.
- **Parity with Weaker**
 The US does not need a nuclear force capable of delivering retaliatory strikes against simultaneous Chinese and Russian nuclear attack. Rather, the US needs a nuclear force at parity with the weaker of the two.
- **No Expansion**
 The US must avoid conducting nuclear force modernization or other programs in ways that expand its nuclear capabilities, as doing so would undermine strategic stability by incentivizing Chinese-Russian coordination to counter the US.
- **None of the Above**

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