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ABSTRACT: The reemergence of great power competition, conflict with near-peer competitor states below the level of armed conflict, and persisting threats from nonstate actors with transnational ambitions and global reach pose challenges for strategists planning, executing, and assessing military operations and strategy. Building on current visualization tools, two proposed models—the National Strategic Risk Abacus and the National Strategic Risk Radar Chart—address these challenges and better depict how the US military may inadvertently contribute to risk at the national strategic level.

This article offers insights and tools to assist strategic planners in assessing how US military actions may produce "national strategic risk": risk to the grand strategic goals of American security and prosperity over time. Most current risk assessment tools are useful for capturing tactical and operational level risk; however, as this article proposes, they are insufficient for comprehending the complexities of national strategic risk. Specifically, assessing risk at the national strategic level is more difficult than assessing risk at the tactical or operational levels because of "compounding risk," the unanticipated effects of military actions on achieving national security goals. Furthermore, military actions taken at one point in time could have unintended long-term effects, "cascading risk," making risk assessment at this level difficult. Finally, the considerable challenges inherent in formulating an effective response to what several scholars call "strategic surprises" to national security can also produce risk.[1]

This article proposes two visualization models US military planners can use to capture compounding and cascading risk and identify risk during times of strategic surprise. These models will offer a first step for visualizing the complexity of risk assessment at the national strategic level and will provide guidance for military planners considering the macro-level and long-term effects of operations on wider national security strategy.

1. For example, see Richard K. Betts and Thomas G. Mahnken, *Paradoxes of Strategic Intelligence: Essays in Honor of Michael I. Handel* (London: Routledge, 2003), 1–58; Paul Bracken, Ian Bremmer, and David Gordon, eds., *Managing Strategic Surprise: Lessons from Risk Management and Risk Assessment* (New York: Cambridge University Press, 2008); Robert S. Kaplan, Herman B. "Dutch" Leonard, and Anette Mikes, "Novel Risk" (working paper 20-094, Harvard Business School, 2020), 1–25; and Headquarters, Department of the Army (HQDA), Field Manual (FM) 100-14, *Risk Management* (Washington, DC: Department of the Army, 1998).

The article proceeds as follows. Section two outlines how the US military addresses risk at the tactical, operational, and Joint levels, which are doctrine and models designed to assess and mitigate risk within its own operations. Section three defines national strategic risk, including how it differs from military risk, and demonstrates some of the challenges associated with identifying, assessing, and predicting risk at the national strategic level. Section four highlights the utility of visualization tools and introduces two visualization models designed to capture compounding and cascading risk: the National Strategic Risk Abacus and the National Strategic Risk Radar Chart. Finally, section five provides concluding remarks.

Risk Assessment at the Tactical, Operational, and Joint Levels

The US military has developed a series of nested doctrine and models to assist leaders in addressing risk at the tactical, operational, and Joint levels, including Field Manuals (FM), Army Techniques Publications (ATP), and Joint documents. While these tools have proven helpful in mitigating risk within the US military's operations, they are insufficient for assessing national strategic risk.

In 1998 the Army developed the first systematic tool to assess risk, FM 100-14, *Risk Management*, to codify its process for assessing, managing, and evaluating risk, primarily at the tactical level.[2] The manual articulates a five-step risk management process to "identify hazards, assess hazards to address risks, develop controls and make risk decisions, implement controls, and supervise and evaluate."[3] These steps, designed to help leaders make better-informed decisions that save lives and resources during a mission, do not address broader considerations beyond basic control measures. This risk assessment tool, therefore, has limited utility at the national strategic level.

To provide a more holistic approach to risk assessment, the US Army published FM 5-19, *Composite Risk Management*, in 2006.[4] While maintaining the same basic five-step risk management process from FM 100-14, FM 5-19 outlines a new tool matrix that considers the severity of risk (negligible, marginal, critical, and catastrophic) with the probability of risk (unlikely, seldom, occasional, likely, and frequent).[5] This combination of frequency and severity of risk produces an assessed outcome (low, medium, high, or extremely high) that allows leaders to identify an acceptable level of risk based on the likelihood of an event occurring measured against the severity of impact to things like "personnel, equipment,

2. HQDA, FM 100-14, *Risk Management* (Washington, DC: Department of the Army, 1998).
3. HQDA, FM 100-14, 108–9.
4. HQDA, FM 5-19, *Composite Risk Management* (Washington, DC: Department of the Army, 2006).
5. HQDA, FM 5-19, 1-9 to 1-10.

environment or mission."[6] Although this tool includes more aspects associated with risk, it is still primarily focused on the tactical and operational levels.

Building on FM 5-19, the US Army published ATP 5-19, *Risk Management*, in 2014 with the aim of further systematizing risk assessment by identifying potential hazards, assessing them, and managing their associated risks, in what the training publication calls "composite risk management."[7] ATP 5-19 retains a holistic view of risk management but adds the complexity of multiple mission sets rather than the traditional practice of separating accidents into single events. Additionally, it better integrates this approach into the Army's military decision-making process. Finally, ATP 5-19 calls for leaders to employ the Risk Assessment Matrix, originally outlined in FM 100-14 and depicted in FM 5-19, to use the five-step process cyclically and continuously and to apply the process across all Army operations, big and small.[8] Again, as with FM 100-14 and FM 5-19, this manual focuses on the tactical and operational levels of risk and is not easily applied to assessing strategic level risk.

In 2019, the chairman of the Joint Chiefs of Staff drafted the manual *Joint Risk Analysis* to assist senior leaders in understanding military risk at the Joint level.[9] The document establishes a new Joint Risk Analysis Methodology (JRAM). The JRAM framework incorporates three major components to assess risk: risk appraisal, risk management, and risk communication, with four activities: "problem framing" (identifying what the risk is assessed against), "risk assessment" (identifying where the risks are coming from), "risk judgment" (identifying what level of risk is acceptable to assume), and "risk management" (identifying what actions should be taken to help mitigate the risk).[10] The three JRAM components tie together the four steps of the framework and promote the continual consideration of the components throughout the four steps.

The overall goal of the JRAM is to provide military leaders and staffs with a model for assessing risk at the Joint military level, the actions needed to achieve specific outcomes, and the resources required to achieve those outcomes. By moving away from simple terms such as high or low to articulate risk, leaders can identify greater specificity in the description of risk across a broader range of events and actions. Despite the improvements the JRAM brings to assessing risk at the highest operational level, particularly the inclusion of both quantitative and qualitative methods of articulating risk, the tool addresses risk to military

6. HQDA, FM 5-19, 1-15.
7. HQDA, Army Techniques Publication (ATP) 5-19, *Risk Management* (Washington, DC: Department of the Army, 2014), v–vii.
8. HQDA, ATP 5-19, 4-1–4-14.
9. Joint Chiefs of Staff (JCS), Chairman of the Joint Chiefs of Staff Manual (CJCSM) 3105.01, *Joint Risk Analysis* (Washington, DC: JCS, 2019).
10. JCS, CJCSM 3105.01, B-2–B-6.

goals only and does not provide adequate means for assessing risk at the national strategic level. As will be described later, more complex models are needed to assess and visualize national strategic risk.

Assessing Risk at the National Strategic Level

The US military, despite developing doctrine and models aimed at understanding how actions affect risk at the tactical, operational, and Joint levels, has focused few resources on the ability to identify risk at the national strategic level. This section provides insights into how US military actions could create risk at the national strategic level, differentiates national security strategy from military strategy, describes the instruments of national power needed to realize national security and prosperity over time, considers the role national security documents play in naming threats and opportunities, and identifies specific types of risks the US military might create through its actions at this level.

The first step in understanding how military actions may incur risk to national security strategy is distinguishing it from military strategy. Military strategy focuses on achieving an objective in war using the military as the primary instrument of power. National security strategy (also called grand strategy or statecraft) provides a broader, long-term vision of a country's threats and opportunities and actions that will help shape the world in a way that favors its interests. Colonel R. W. Van de Velde describes statecraft as "the process through which a nation attempts to minimize its weaknesses and limitations, and to maximize its strengths and capabilities in a current international situation."[11]

National security strategy has much broader and longer-term goals than military strategy, which include security as well as prosperity. It requires multiple instruments of power and a whole-of-government approach for realizing these goals.[12] Van de Velde outlined four broad instruments of national power in particular: "the diplomatic, the economic, the military, and the psychological" tools of statecraft.[13] Subsequent descriptions of the instruments of national power have changed the psychological tool to the information tool, creating the acronym DIME, but perhaps losing the purpose of information, which is to influence the

11. Colonel R. W. Van de Velde, "Instruments of Statecraft," *Army* 13, no. 5 (December 1962): 53.
12. Sir Michael Howard, "Grand Strategy in the 20th Century," *Defense Studies* 1, no. 1 (2001): 1–10.
13. Van de Velde, "Instruments of Statecraft." Here it is assumed that no one agency or department controls any given instrument of national power. For example, see Heather S. Gregg, "Crafting a Better US Grand Strategy in the Post–September 11 World: Lessons from the Early Years of the Cold War," *Foreign Policy Analysis* 6, no. 3 (July 2010): 237–55.

thought and behavior of a target audience.[14] Still others have expanded the tools of statecraft to include finance, intelligence, and law enforcement (DIME-FIL or MIDLIFE).[15] Including intelligence as a separate tool of statecraft is especially important because it differentiates the practice of gathering and assessing information to help in decision making at various levels from information as a tool used to "change or maintain the drivers of behavior" in target audiences.[16]

To realize its national security strategy, the US government has developed several documents to identify its threats, opportunities, and national strategic goals. The *National Security Strategy* (*NSS*) drafted by the executive branch of government is the principal vision for articulating the nation's strategic threats and opportunities. The 2017 *NSS* identified several threats to US interests, ranging from "transnational criminal organizations" to the need to secure US borders and territory to the importance of promoting "free, fair, and reciprocal economic relationships" with other countries.[17] Some of the opportunities addressed in the 2017 *NSS* included promoting the prosperity of the United States through "lead[ing] in research, technology, and innovation," and renewing its competitive advantage by improving capabilities across multiple domains, such as cyber and space, as well as its nuclear posture.[18] The *NSS* draws on all instruments of national power to address these threats and opportunities over time.

The *2018 National Defense Strategy* written by the Office of the Secretary of Defense takes guidance from the *NSS* and applies it to the military instrument of power. The *National Defense Strategy* names the following military goals: "build a more lethal force, strengthen alliances and attract new partners, and change the way we do business," as the US military's means of implementing the *NSS*.[19] The *2018 National Military Strategy* drafted by the chairman of the Joint Chiefs of Staff helps "inform the prioritization of force employment, force development, and force design for the Joint Force."[20] The *National Military Strategy* identifies

14. Steven Heffington, Adam Oler, and David Tretler, eds., *A National Security Strategy Primer* (Washington, DC: National Defense University Press, 2019), 22.

15. Cesar Augusto Rodriguez, Timothy Charles Walton, and Hyong Chu, "Putting the 'FIL' into 'DIME': Growing Joint Understanding of the Instruments of Power," *Joint Forces Quarterly* 97, no. 2 (2020): 121–28.

16. For intelligence and statecraft, see John A. Gentry and Joseph S. Gordon, *Strategic Warning Intelligence: History, Challenges, and Prospects* (Washington, DC: Georgetown University Press, 2019). For information, see JCS, *Joint Concept for Operating in the Information Environment* (*JCOIE*) (Washington, DC: JCS, 2018), 111, https://www.jcs.mil/Portals/36/Documents/Doctrine/concepts/joint_concepts_jcoie.pdf?ver=2018-08-01-142119-830, accessed January 29, 2021.

17. Donald J. Trump, *2017 National Security Strategy of the United States of America* (Washington, DC: White House Office, December 2017), 11–12, 19–20. See also Joseph R. Biden Jr., *Interim National Security Strategy Guidance*, accessed August 14, 2021, https://www.whitehouse.gov/wp-content/uploads/2021/03/NSC-1v2.pdf.

18. Trump, *National Security Strategy*, v–vi.

19. Katie Lange, "What Is the National Defense Strategy?" US Department of Defense, October 8, 2018, https://www.defense.gov/Explore/Features/story/Article/1656414/what-is-the-national-defense-strategy/.

20. JCS, "Description of the 2018 National Military Strategy Released," Office of the Chairman of the Joint Chiefs of Staff Public Affairs, accessed May 21, 2020, https://www.jcs.mil/Media/News/News-Display/Article/1903669/description-of-the-2018-national-military-strategy-released/.

several threats to the US military, ranging from the "reemergence of great power competition" to newly emerging technologies, which are "changing the character of war" and "empower[ing] nonstate actors.[21] Additionally, the *National Military Strategy* addresses opportunities, including working with "allies and partners" to strengthen national security and evolving areas within force employment, development, and design.[22] These strategic level documents identify a range of threats and opportunities that all require the assessment of risk, not just for military actions but for all the instruments of national power.

These documents are necessary but insufficient for identifying risk at the national strategic level. Critically, risk can occur independent of threat assessments of an adversary's capabilities and intentions and can actually be the unintended result of actions taken within a government to secure itself. One critical way risk can inadvertently occur within the US military's actions is through compounding risk. Compounding risk can occur when actions conducted by one department or agency in the government, such as the military, could incur an acceptable level of risk for that particular organization, but could also affect other agencies and cause unintended risk to broader national security interests. This form of risk is similar to challenges identified in complexity theory, where complex, nonlinear, loosely organized yet interconnected elements within a system affect one another, or to the butterfly effect, where small changes in a nonlinear system can have bigger consequences across the organization and over time.[23]

One example of the US military's creation of compounding risk comes from an incident in Afghanistan. In 2012, the US military discovered detainees were using religious materials, including Qur'ans, to pass information to one another. Military police confiscated the materials and chose to burn them, unaware of how Muslims would perceive these actions. Reports of the burned materials led to violent riots in Afghanistan and resulted in at least 41 deaths and strained relations with US allies.[24] This poorly thought-out act incurred minimal risk to US troops, but had compounding effects, beyond just the military, on departments and agencies that use diplomacy and information to achieve national strategic goals.

21. JCS, "*National Military Strategy Released,*" 2-6.

22. JCS, "*National Military Strategy Released,*" 2-6.

23. See Eve Mitleton-Kelly, *Complex Systems and Evolutionary Perspectives on Organisations: The Application of Complexity Theory to Organisations* (Oxford, UK: Elsevier Science Ltd., 2003): 1–31; and Edward N. Lorenz, "The Predictability of Hydrodynamic Flow," *Transactions of the New York Academy of Sciences* 25, no. 4 (February 1963): 409–32.

24. Craig Whitlock, "U.S. Troops Tried to Burn 500 Korans in Blunder, Investigative Report Says," *Washington Post*, August 27, 2012, https://www.washingtonpost.com/world/national-security/military-disciplines-9-service-members-in-connection-with-afghan-incidents/2012/08/27/a25b6eaa-f065-11e1-8b5e-add8e2fb7c95_story.html/.

Another challenge to assessing risk at the national strategic level requires accounting for cascading risk, or the accumulation of risk over time. Unlike tactical or operational plans in the military, national security strategy has a much longer time horizon which, in theory, is never-ending, presenting considerable challenges for military planning, which usually assumes an end point.[25] This lengthened time horizon complicates weighing opportunities and risks associated with actions in the here-and-now and considering their possible effects in the future. Actions that seem to have reasonable risk in the near term may have lasting and cascading consequences for national security over time.

An example of cascading risk is visible in the Global War on Terror, declared by the president of the United States following the 9/11 attacks. This strategy, which drew heavily on the US military, produced the following cascading effects: it led to a major military engagement in Afghanistan, the United States' longest war; it contributed to the reasons given for invading Iraq in 2003; it increased US military activities in Africa and Asia; and it even prompted changes in US privacy laws. The Global War on Terror also strained relationships with European countries and other allies and has had a lasting negative impact on the image of the United States in the Muslim world.[26] This accumulation of actions related to the Global War on Terror has incurred risk to national security through strained relationships with allies, the prolonged deployment and expenditure of US military power around the globe, and counterproductive perceptions of US intentions in the Muslim world. It is unlikely these cascading consequences over time were considered in 2001 when the Global War on Terror was declared.

Assessing risk at the national strategic level also requires planning for events that are rare or without precedent. Several scholars study this form of risk, "strategic surprise," which includes events such as large-scale terrorist attacks, covert nuclear proliferation, and sneak attacks from adversarial states.[27] The difficulty in planning for and responding to risk from strategic surprise in national security stems from the challenges associated with identifying early warnings in intelligence gathering, the trust that policymakers have in that intelligence and their overall belief in that threat, the ability of leaders

25. Jeremiah R. Monk, *End State: The Fallacy of Modern Military Planning* (Montgomery, AL: Air War College/Air University, 2017).

26. For negative perceptions of US intentions in the Muslim world, see Andrew Kohut, "Arab and Muslim Perceptions of the United States," Pew Research Center, November 10, 2005, https://www.pewresearch.org/2005/11/10/arab-and-muslim-perceptions-of-the-united-states/.

27. See Betts and Mahnken, *Paradoxes of Strategic Intelligence*; and Bracken, et al, *Managing Strategic Surprise*; and Gentry and Gordon, *Strategic Warning Intelligence*. See also Erik Dahl, *Intelligence and Surprise Attack: Failure and Success from Pearl Harbor to 9/11 and Beyond* (Washington, DC: Georgetown Press, 2013). Nathan Freier calls this "strategic shock." See Nathan Freier, *Toward a Risk Management Defense Strategy* (Carlisle, PA: Strategic Studies Institute, 2009).

to consume that information, and decision making under duress.[28] Bracken, Brenner, and Gordon also note the challenges posed by subject matter experts who become too narrowly focused in their expertise, which inhibits their consideration of new frameworks for analysis and poses another potential hindrance to identifying strategic surprise.[29] Finally, most individuals are biased by their perceived understanding of the current environment and historically similar events, which can skew decision making and risk analysis.[30] Risk from strategic surprise and the need to respond in a crisis can in turn exacerbate compounding and cascading risk. The Global War on Terror, as described above, delineates the challenges posed by assessing risk in actions undertaken during strategic surprise.

While the US government has articulated various threats and opportunities to its national security in key documents, these documents are insufficient for addressing how US military operations may incur risk to national security strategy, specifically, the challenges posed by compounding risk and its effects on other instruments of power and government activities, cascading risk over time, and how strategic surprise can exacerbate these forms of risk. The next section offers two visualization tools designed to help the US military account for these challenges and assess risk at the national strategic level.

Visualizing Risk at the National Strategic Level

Assessing risk at the national strategic level requires the US military to identify and assess how their actions may affect the government's use of other instruments of statecraft to achieve national strategic goals over time. Visualization tools are particularly useful in this endeavor because they can capture otherwise disparate information, show how various actions might incur compounding and cascading risk, and identify potential risk in times of strategic surprise.

Visualization expert Edward Tufte describes the utility of visualization tools by summarizing "What is to be sought in designs for the display of information is the clear portrayal of complexity."[31] Visualization tools can present qualitative and quantitative data as well as spatial and conceptual information. For example, French civil engineer Charles Joseph Minard's now-famous nineteenth-century depiction of Napoleon's disastrous 1812 march to Moscow captures six different types of quantitative and spatial data through a combination of size, placement, and color: "the size of the army, its

28. Gentry and Gordon, *Strategic Warning Intelligence*; and Dahl, *Intelligence and Surprise Attack*.
29. Bracken, Brenner, and Gordon, *Managing Strategic Surprise*, 2.
30. David Epstein, *Range: Why Generalists Triumph in a Specialized World* (New York: Penguin Random House, 2019).
31. Edward Tufte, *The Visual Display of Quantitative Information* (Cheshire, CT: Graphics Press, 2001), 191.

location on a two-dimensional surface, direction of the army's movement, and temperature on various dates during the retreat from Moscow."[32] The result is a clear visualization of Napoleon's loss of troops relative to time, terrain, and temperature. In the age of big data, visualization tools have become particularly useful for gathering and presenting large amounts of statistical information in a way that is understandable.[33] Yet, as depicted by Minard and others, nonquantifiable information can also be displayed with visualization tools in a way that clarifies complexity.

Two visualization models help depict compounding and cascading risk to military planners and may be particularly useful for identifying risk during times of strategic surprise—the National Strategic Risk Abacus and the National Strategic Risk Radar Chart. The National Strategic Risk Abacus helps military planners think specifically about compounding risk, including compounding risk incurred through strategic surprise. It depicts two sets of variables: a spectrum of acceptable to unacceptable risk on the bottom horizontal line, and the instruments of national power—diplomatic, information, military, economic, and external/other which, for example, could include variables like allies—as the abacus beads. See figure 1.

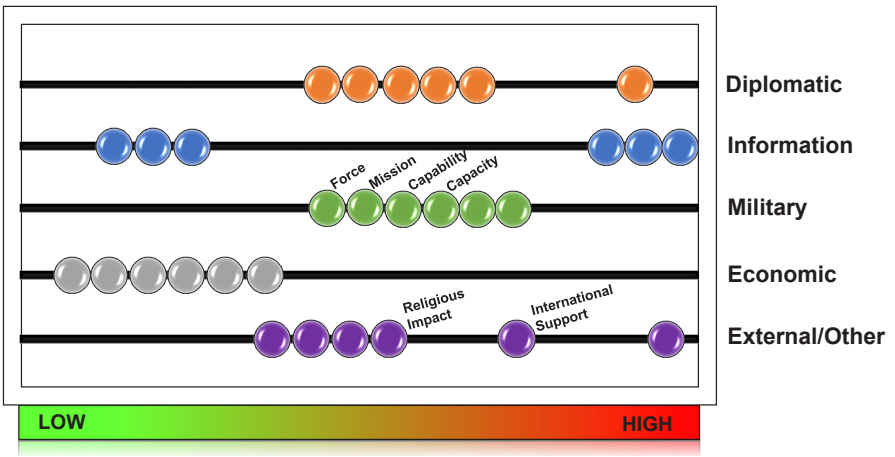

Figure 1. National Strategic Risk Abacus – Example Assessment of Collective National Risk

The beads can slide from left to right, depending on the amount of risk assumed within each instrument, to show how military actions can have a compounding effect on the use of the other instruments within the departments and agencies of the US government. Here it is assumed that no one agency or department controls any given instrument of national power. The abacus is particularly useful for addressing compounding risk incurred during incidents of strategic surprise; it allows for a simple

32. Tufte, *Visual Display*, 40.
33. Scott Berinato, "Visualizations That Really Work," *Harvard Business Review*, June 2016, 92–100.

and quick assessment of how military actions might inadvertently incur risk to the other instruments of national power and US efforts to wield these instruments for national security goals.

In the strategic surprise caused by the Global War on Terror, the US military could have used the National Strategic Risk Abacus to consider the possible compounding effects of specific actions on the other instruments of national power. The abacus could have helped planners visualize how military actions might affect Muslim attitudes toward the United States, which could incur risk to the information tool, or how military actions might strain relationships with Muslim-majority allied countries, which could affect the government's use of both the diplomatic and the military instruments of national power.

The second model, the National Strategic Risk Radar Chart, uses a radar chart (sometimes called a spider chart) to depict compounding and cascading risk. A radar chart "is a 2D chart presenting multivariate data by giving each variable an axis and plotting the data as a polygonal shape over all axes."[34] More simply, a radar chart plots different variables onto a graph. Each variable has its own ray originating from the center, like a spoke on a wheel. Connecting each plot point creates a polygonal shape on the chart. This chart is particularly useful for plotting multiple variables and disparate information on a single graph for visual analysis, including both compounding and cascading risk.

Several government agencies currently use radar charts to assess national threats, incorporating numerous variables to visualize their holistic effect. The Department of Homeland Security uses a radar chart to assess the effects of a potential "cyberattack on critical infrastructure," as well as to visualize the wide-ranging effects of an influenza pandemic on the United States. These charts contain 5 levels of homeland security hazards, ranging from 1 (low) to 5 (high) in concentric rings across 16 identified attributes (the spokes), including health-related issues such as injuries or deaths, economic impact, and environmental effects. Risk is plotted on a scale from 0 (at the center) to 1 (at the edge), with 0 representing the lowest value in this set of hazards, and 1 representing the highest value.

Finally, the attributes are grouped in quadrants: the upper right quadrant addresses health effects, the lower right quadrant focuses on economic damage, and the upper and lower left quadrants consider environmental or atmospheric consequences.[35] These three sets of factors—contributing variables, level of risk, and effect on health

34. Stephanie Glen, "Radar Chart: Simple Definition, Examples," Statistics How To, February 7, 2018, https://www.statisticshowto.datasciencecentral.com/radar-chart-simple-definition-examples/.

35. Russell Lundberg and Henry Willis, "Assessing Homeland Security Risks: A Comparative Assessment of 10 Hazards," *Homeland Security Affairs* 11, article 10 (December 2015), accessed May 21, 2020, https://www.hsaj.org/articles/7707.

and economics—allow for a quick visual comparative representation of several types of risks and their holistic effects.

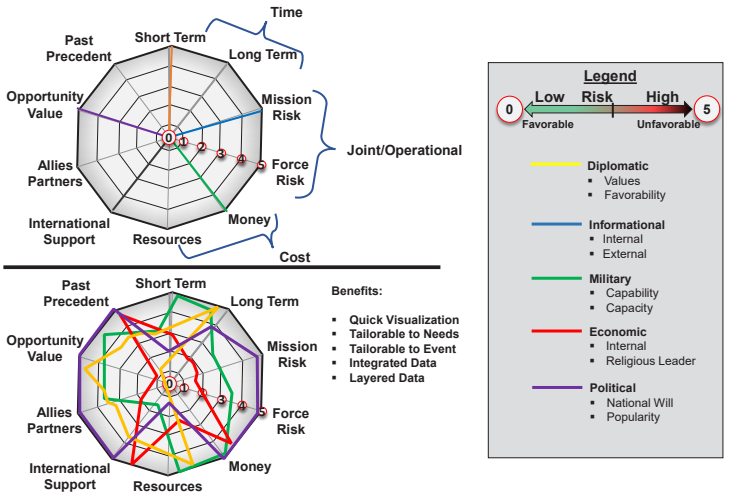

Figure 2. National Strategic Risk Radar Chart

Radar charts are especially useful for assessing risk at the national strategic level because they can accommodate many critical variables for quick visualization of compounding and cascading risk. Figure 2 includes five levels of risk (from low to high), along with 10 variables on the spokes, including time, allies, and economic impact. The instruments of national power are depicted as polygonal shapes, each with its own color, to visualize the risk to each instrument. Most important, this radar chart includes time as a variable, allowing for cascading risk to be considered. A radar chart like this one would have allowed military lanners to see a wide range of possible risks incurred from actions in the Global War on Terror, including the effects of actions on international support, resources, allies, and partners and risks to their own missions and forces.

Conclusion

The US military's role in assessing national strategic risk and its ability to understand and mitigate this form of risk is a critically important task. This article provided insights into what national strategic risk is and why current risk assessment tools in the US military are insufficient for addressing risk at this level. Specifically, it argued that assessing risk at the national strategic level is more difficult for the US military than assessing risk at the tactical or operational levels because this level of analysis involves considering the effects of military actions on other instruments of national power across the US government and

risk over time. US military actions could inadvertently cause compounding risk, or risk to other instruments of power; it could incur unforeseen risk over time, or cascading risk; and it could produce risk through decisions made under duress from strategic surprise to national security. The two proposed visualization tools for considering risk at the national strategic level—the National Strategic Risk Abacus and the National Strategic Risk Radar Chart—could help military leaders rapidly assess the risks associated with proposed courses of action and make more informed decisions on a way forward.

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