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## Planning for Positive Strategic Shock in the Department of Defense

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**ABSTRACT:** A concept of positive strategic shock would benefit the US Department of Defense's planning processes. Some US doctrine demonstrates awareness of the need to plan for negative strategic shocks but lacks consideration of positive strategic shock—any shock with a non-zero-sum outcome—which could create a situation where the Department of Defense misses opportunities. This article clarifies the term *positive strategic shock*, provides a brief review of where and how planning for any sort of strategic shock currently occurs, and makes recommendations based on three methods for thinking about strategic shock.

**Keywords:** shock, positive, non-zero-sum, planning, doctrine

**A**lthough US doctrine demonstrates awareness of the need to plan for negative strategic shocks, the lack of consideration of disruptive effects caused by positive strategic shocks could leave the Department of Defense (DoD) in a position where it misses the benefits of such shocks.<sup>1</sup> Advocacy for incorporating positive strategic shock in DoD planning processes first requires clarification of the term. *Negative strategic shock* refers to the deleterious facet of “unknown unknowns” and more practical “known unknowns” mentioned by the then Secretary of Defense Donald Rumsfeld and later analyzed by Nathan Freier and others, but *positive strategic shock* must be more ambiguously defined. After establishing a working definition of negative and positive strategic shock, the article explores existing processes for responding to strategic shock. Finally, three methods for thinking about strategic shock in planning—those of reframing, horizon scanning, and the “barbell” approach—form a basis for recommendations on how to consider incorporating a concept of positive strategic shock in DoD planning processes.

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1. Paul Austin Murphy, “Rumsfeld’s Logic of Known Knowns, Known Unknowns and Unknown Unknowns,” A Philosopher’s Stone (blog), December 12, 2020, <https://medium.com/the-philosophers-stone/rumsfelds-logic-of-known-knowns-known-unknowns-and-unknown-unknowns-f506db31ac74>; Nathan Freier, *Known Unknowns: Unconventional “Strategic Shocks” in Defense Strategy Development* (Carlisle, PA: Strategic Studies Institute, 2008), <https://apps.dtic.mil/dtic/tr/fulltext/u2/a489100.pdf>; and Nathan Freier, Robert Hume, and John Schaus, “Special Commentary: Memorandum for SECDEF: Restore ‘Shock’ in Strategic Planning,” May 5, 2020, [https://ssi.armywarcollege.edu/wp-content/uploads/2020/05/COVID-19-Shocks\\_Freier\\_Hume\\_Schaus\\_v1.3\\_post.pdf](https://ssi.armywarcollege.edu/wp-content/uploads/2020/05/COVID-19-Shocks_Freier_Hume_Schaus_v1.3_post.pdf).

## Coming to Terms with Strategic Shock

Positive strategic shock, and strategic shock more generally, require clarification before proceeding. First, it is important to note that a parallel exists between defense-related strategic shock and the concept of *disruption* in business models. Former Harvard Business School professor Clark Gilbert observes that, like strategic shock, the concept of disruption “has usually been considered by established businesses as an attack that must be met through defensive measures.” Gilbert also points out, however, that “the real story behind disruptive innovation is not one of destruction, but of its opposite: In every industry changed by disruption, the net effect has been total market growth.”<sup>2</sup> This initial tendency within established businesses to frame disruption negatively provides a starting point for a critique of defense-related strategic shock. Is only the negative aspect considered? If so, is it because only negative strategic shocks exist or because threat perceptions within the Department of Defense choose to focus on the negative?

Before focusing specifically on positive strategic shock, strategic shock should be understood more generally. Freier links “defense-relevant” strategic shock to the same forces operating in business when he characterizes strategic shocks as “disruptive, transformational events for DOD [Department of Defense].”<sup>3</sup> Freier explains that, despite some degree of uncertainty in origin and exact nature, his work considers only shocks that display clear, promulgating trends. This means the shock experienced could have been recognized and accounted for in advance if not for the decisions to ignore certain data and analysis.<sup>4</sup> Rumsfeld advocated a more complete framework for shock, events deriving from both unknown unknowns and known unknowns.<sup>5</sup> Freier considers only the known unknowns while relegating the unknown unknowns to a domain too speculative to bear consideration in DoD resource allocation or planning.<sup>6</sup> This dismissal of the unknown unknown is precipitous, however, as possibilities exist for the Department of Defense to posture itself vis-à-vis unknown unknowns without overcommitting resources.

Although Rumsfeld’s quote popularized these terms, had been in use in strategic planning and project management since the late 1990s.<sup>7</sup> A known unknown is an anticipated gap, which, according to Rumsfeld,

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2. Clark Gilbert, “The Disruption Opportunity,” *MIT Sloan Management Review*, July 15, 2003, <https://sloanreview.mit.edu/article/the-disruption-opportunity/>.

3. Freier, Hume, and Schaus, “Restore ‘Shock’ in Strategic Planning,” 1.

4. Freier, Hume, and Schaus, “Restore ‘Shock’ in Strategic Planning,” 1.

5. Donald H. Rumsfeld and Richard B. Myers, “DoD News Briefing – Secretary Rumsfeld and Gen. Myers,” (briefing, US Department of Defense, Washington, DC: February 12, 2022), <https://archive.today/20180320091111/http://archive.defense.gov/Transcripts/Transcript.aspx?TranscriptID=2636>.

6. Freier, *Known Unknowns*, 11.

7. Murphy, “Rumsfeld’s Logic.”

can eventually be made a “known known” through “[asking] the right questions.”<sup>8</sup> Therefore, known unknowns do not necessarily portend strategic shock, except in instances when an organization fails to ask the right questions. Conversely, unknown unknowns, unanticipated gaps in knowledge, are what Nassim Nicholas Taleb calls “Black Swans” in his metaphor for events characterized by “rarity, extreme impact, and retrospective (though not prospective) predictability.”<sup>9</sup> Unlike Taleb, Freier does not address the potential for such unpredictable events to exhibit positive potentiality, but he does capture the importance of examining a gap in defense strategy that does not address the known unknown as “unconventional ground where irregular, catastrophic, and hybrid ‘threats of purpose’ and ‘threats of context’ rise and mix in complex combinations to challenge core interests.”<sup>10</sup> Freier provides a model for thinking about shock in DoD planning, but his model is limited to the known unknown and negative strategic shock.

Expanding Freier’s thinking to consider the Black Swan and the known unknown as they relate to planning in the Department of Defense and to incorporate the possibility of positive strategic shock provides a more complete framework. Whether in utter surprise at a Black Swan or in a situation where blindness compounds the effect of a known unknown, shock will disrupt the Department of Defense if the institution has not developed a process allowing it to anticipate and implement policy before experiencing shock.<sup>11</sup> Again, that shock could be negative or positive, and the ways an organization thinks about and responds will—or at least should—differ on a case-by-case basis. This is why an expansion of Freier’s thinking, and the work to define that expansion, is important.

The term positive strategic shock has already been used in strategic planning literature, albeit with a meaning slightly divergent from the beneficial Black Swan or known unknown. Colin S. Gray has extrapolated a positive outcome can be obtained when negative shocks force an enterprise to recognize a deficiency and play catch-up. Gray writes, “Considered positively, national security challenges may well lend themselves persuasively to identification of opportunities.”<sup>12</sup> Like Freier’s phrasing, Gray’s phrasing precludes a positive event. Instead, Gray focuses on the idea that even negative shocks have the potential for positive benefits. By Gray’s definition,

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8. Donald H. Rumsfeld, *Known and Unknown: A Memoir* (New York: Sentinel, 2011), xiv.

9. Nassim Nicholas Taleb, *The Black Swan: The Impact of the Highly Improbable* (New York: Random House, 2007), xviii.

10. Freier, *Known Unknowns*, 13.

11. Freier, *Known Unknowns*, 7.

12. Colin S. Gray, *Categorical Confusion? The Strategic Implications of Recognizing Challenges Either as Irregular or Traditional* (Carlisle, PA: US Army War College Press, 2012), 20, <https://ssi.armywarcollege.edu/2012/pubs/categorical-confusion-the-strategic-implications-of-recognizing-challenges-either-as-irregular-or-traditional/>.

positive strategic shock is merely dependent on negative strategic shock and not considered an independent occurrence.

Adding additional confusion, Peter Schwartz, in *Inevitable Surprises* (Gotham Books, 2003), takes a more nuanced approach to describing the same process of achieving positive results from a negative shock. He reframes the perspective taken on a negative strategic shock, such as that of mass immigration to Europe, as a positive shock, or positive when viewed from a different perspective.<sup>13</sup> This case would require Europe to reframe its stance on immigration with a more inclusive and therefore entrepreneurial spirit along the lines of what Schwartz asserts has been a historical strength for America.<sup>14</sup> This process of reframing bears further consideration as a recommendation for how the Department of Defense might better plan for strategic shock. Differentiating and recognizing the past usage by Gray and Schwartz of the term positive strategic shock helps frame a more complete set of recommendations.

Finally, for clarity, a few additional terms require further discussion. First, the gravity of labeling a shock as *strategic* should not be ignored, nor should the occasional overuse of the term *strategy* dilute its connotations. According to Freier, shocks of this magnitude “jolt convention to such an extent that they force sudden, unanticipated change in the Department of Defense’s (DoD) perceptions about threat, vulnerability, and strategic response. Their unanticipated onset forces the entire defense enterprise to reorient and restructure institutions, employ capabilities in unexpected ways, and confront challenges that are fundamentally different than those routinely considered in defense calculations.”<sup>15</sup>

Working from this definition, many historical examples of shock appear insufficiently disruptive, and many scanning processes for shock are ineffective. Whether an event is truly strategic in nature matters because issues below the strategic level tend not to disrupt the Department of Defense as an institution and pose less of an existential threat. For example, while the advent of hypersonic missiles is sometimes labeled a strategic issue, it has not created

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13. Peter Schwartz, *Inevitable Surprises: Thinking ahead in a Time of Turbulence* (New York: Gotham Books, 2003), 49, 67–69. See also p. 12 for similar reframing of IBM’s transition from mainframe to services business model.

14. Schwartz, *Inevitable Surprises*, 49, 67–69.

15. Freier, *Known Unknowns*, vii.

a need for restructuring institutions, only additional research and perhaps some technological one-upmanship at the operational level.<sup>16</sup>

Due to its highly subjective nature, “positive” also risks being misused in discussions of strategic shock. One way to overcome that subjectivity is to equate positivity with the concept of a *non-zero-sum game*. Unlike most sports where one competitor loses as a condition of the other winning, in a non-zero-sum (also win-win) scenario both parties win because the activity creates aggregate growth.<sup>17</sup> They often avoid direct confrontation in favor of approaches and actions that at least fractionally align and thus mutually reinforce one another.<sup>18</sup> The definition of positive strategic shock used here, therefore, does not equate to positive gain contingent on negative shock, nor does it involve reframing a negative event as a positive one. The definition avoids a consideration of shock that occurs at a lower (perhaps operational or tactical) level. Instead, positive strategic shock represents a non-zero-sum occurrence requiring significant institutional reorientation. It falls within either the category of unknown unknowns or the known unknowns for which the Department of Defense has not adequately planned. The defining characteristic of positivity becomes its non-zero-sum orientation. Based on this definition, shocks that are positive for the United States but negative for its competitors or partners are still considered negative strategic shocks.

Here, a few concrete examples will help ground the discussion and clarify how certain past shocks were both strategic and non-zero-sum. Although not exhaustive, these examples display varying degrees of import to the military industrial capability of the Department of Defense. They include the discovery and proliferation of vaccines, the widespread ability to refrigerate food, and the development of the Internet. These are non-zero-sum because they benefit most, if not everyone, and operate at the strategic level rather than the operational or tactical levels. Looking to the future, the Department of Defense should anticipate the possibilities of cold fusion and asteroid mining as potentially non-zero-sum and strategically significant.

Unknown unknowns, however, are by definition unpredictable. The very act of attempting to predict a Black Swan goes against Taleb’s model, which he calls the “barbell strategy,” for how best to prepare.<sup>19</sup> Discussion

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16. David Axe, “Wrong: Why Hypersonic Weapons Aren’t Even Really a Real Weapon (Yet),” *Buzz* (blog), March 18, 2020, <https://nationalinterest.org/blog/buzz/wrong-why-hypersonic-missiles-arent-even-really-real-weapon-yet-134322>.

17. Business Terms Editors, “Non-Zero Sum Game,” Business Terms (website), n.d., accessed January 16, 2022, <https://businessterms.org/non-zero-sum-game/>.

18. Business Terms Editors, “Non-Zero Sum Game.”

19. Taleb, *Black Swan*, 205, 207.

of concrete unknown unknown examples becomes counterproductive, though recommendations for how to prepare still contain valuable insights for the Department of Defense and will be covered later in this article.

## Processing Strategic Shock

One significant obstacle in responding to positive strategic shock is the near absence of a planning methodology around shock of any sort. A review of US military doctrinal guidance yields no mention of positive strategic shock and little on strategic shock of any sort.<sup>20</sup> The *Joint Operating Environment 2035 (JOE 2035)* contains only five references to shock, four that are not germane to a discussion of positive strategic shock and one that recognizes overemphasis of traditional planning as a negative but depreciates shock as “low-end.”<sup>21</sup> *JOE 2035*’s one nod to shock states, “Placing too much emphasis on *contested norms*—particularly those high-tech and expensive capabilities geared to contain or disrupt an expansionist state power—may discount potentially disruptive low-end threats, which have demonstrated a troubling tendency to fester and emerge as surprise or strategic shock for the United States.”<sup>22</sup>

This statement is neither prescriptive nor comprehensive with respect to shock. Unlike Taleb’s or Freier’s works, *JOE 2035* does not approach shock for what it is: a force of uncertainty with which senior DoD leaders should most closely contend, and the mechanism that accounts for most growth and change in the world.<sup>23</sup> Even more troubling, many erstwhile strategic think pieces in the defense space do not consider shock at all; instead they only speculate on relatively noncontroversial and predictable known unknowns.

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20. Donald J. Trump, *National Security Strategy of the United States of America: December 2017* (Washington, DC: White House, 2017), 14, <http://nssarchive.us/wp-content/uploads/2020/04/2017.pdf>; and US Army Training and Doctrine Command (TRADOC), *The Operational Environment and the Changing Character of Warfare*, TRADOC Pamphlet 525-92 (Fort Eustis, VA: TRADOC, 2019), 18, <https://adminpubs.tradoc.army.mil/pamphlets/TP525-92.pdf>.

21. Joint Chiefs of Staff, (JCS), *Joint Operating Environment, JOE 2035: The Joint Force in a Contested and Disordered World* (Washington, DC: JCS, 2016), iii, 55, [https://www.jcs.mil/Portals/36/Documents/Doctrine/concepts/joe\\_2035\\_july16.pdf?ver=2017-12-28-162059-917](https://www.jcs.mil/Portals/36/Documents/Doctrine/concepts/joe_2035_july16.pdf?ver=2017-12-28-162059-917).

22. JCS, *JOE 2035*, 51.

23. Freier, *Known Unknowns*, 3; and Taleb, *Black Swan*, 134.

These pieces include efforts by large organizations, like the RAND Corporation's predictive work, and publications by independent analysts.<sup>24</sup>

The lack of consideration for strategic shock in strategic thinking and DoD planning processes leaves the Department of Defense open to criticism that it is reactive, lacking in imagination, and vulnerable to surprise.<sup>25</sup> Freier explains that “[s]hocks . . . undermine prevailing strategy and planning assumptions.” Shocks also often lie outside what Sam J. Tangredi refers to as “traditional or permitted” areas of defense inquiry.<sup>26</sup> Freier also cites two positive developments in incorporating strategic shock into planning processes. The first is the “Strategic Trends and Shocks” project that began in 2008 in the Office of the Secretary of Defense as a response to a lack of warning around the insurrection after Operation Iraqi Freedom.<sup>27</sup> The second is the awareness of shock's absence in planning processes demonstrated in the *National Defense Strategy*: “The Department should also develop the military capability and capacity to hedge against uncertainty, and the institutional agility and flexibility to plan early and respond effectively alongside interdepartmental, non-governmental and international partners.”<sup>28</sup> This statement does not mention shock specifically, but it can be read as an acknowledgment of, and a directive to employ agility and flexibility to, the great uncertainty of shock. One additional attempt at institutionalizing planning for strategic shock is the State Department's “Project Horizon.” This project demonstrates how the issue of shock, as mentioned in the *National Defense Strategy*, affects national strategy across interdepartmental lines.<sup>29</sup>

That the Department of Defense has not formalized a planning process even for the negative aspect of known unknown strategic shock likely stems from a conservative mindset.<sup>30</sup> Conservatism of this sort leaves the

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24. Raphael S. Cohen et al., *Peering into the Crystal Ball: Holistically Assessing the Future of Warfare* (Santa Monica, CA: RAND Corporation, 2020), [https://www.rand.org/pubs/research\\_briefs/RB10073.html](https://www.rand.org/pubs/research_briefs/RB10073.html); Raphael S. Cohen et al., *The Future of Warfare in 2030: Project Overview and Conclusions* (Santa Monica, CA: RAND Corporation, 2020), [https://www.rand.org/pubs/research\\_reports/RR2849z1.html](https://www.rand.org/pubs/research_reports/RR2849z1.html); James M. Dubik, “No Guarantees When It Comes to War,” Association of the United States Army (website), August 22, 2018, <https://www.ousa.org/articles/no-guarantees-when-it-comes-war>; Kimberly Amerson and Spencer B. Meredith III, “The Future Operating Environment 2050: Chaos, Complexity and Competition,” *Small Wars Journal* (website), July 31, 2016, <https://smallwarsjournal.com/jrnl/art/the-future-operating-environment-2050-chaos-complexity-and-competition>; and Anja Kaspersen, Espen Barth Eide, and Philip Shelter-Jones, “10 Trends for the Future of Warfare,” World Economic Forum (website), November 3, 2016, <https://www.weforum.org/agenda/2016/11/the-4th-industrial-revolution-and-international-security/>.

25. Freier, *Known Unknowns*, 1.

26. Freier, *Known Unknowns*, 4; Sam J. Tangredi, *All Possible Wars? Toward a Consensus View of the Future Security Environment, 2001-2025*, McNair Paper 63 (Washington, DC: National Defense University, 2000), 119.

27. Freier, *Known Unknowns*, 38, 10n.

28. Department of Defense, *National Defense Strategy* (Washington, DC: Department of Defense, June 2008), 5, <https://nssarchive.us/national-defense-strategy/national-defense-strategy-2008/>.

29. Freier, *Known Unknowns*, 25.

30. Freier, *Known Unknowns*, 13, 20, 27.

organization and the nation open to strategic surprise.<sup>31</sup> Furthermore, the presence of this conservative mindset demonstrates that the consideration of unknown unknowns and positive strategic shock must first overcome the Department of Defense's more basic resistance to planning for shock. This conservatism and institutional inertia may be factors leading the Department to keep to the status quo—a good thing in the case of a negative strategic shock, but potentially not when confronted with non-zero-sum sea change.<sup>32</sup>

## Methods to Prepare for Shock

While organizations struggle to anticipate and plan for the risks or rewards of shock, three methodologies suggest ways the Department of Defense should prepare and position itself to adapt and respond to positive shock. These methodologies are the process of horizon scanning as advocated by Freier, the reframing technique demonstrated by Schwartz, and Taleb's barbell approach. While only Taleb specifically considers and proposes techniques anticipating positive strategic shock, all three methodologies offer insights and ideas useful for DoD planners to consider.

Freier's horizon-scanning technique responds to the DoD's perceived hesitancy to engage in speculation and commit resources based on such speculation.<sup>33</sup> This horizon-scanning technique bridges the gap between the areas of "prudent hedging," analogous to the known unknown, and highly speculative, extreme scenarios that could prove disruptive but cannot be accommodated in planning activities because the almost unlimited range of futuristic, low-probability challenges does not warrant the expenditure of resources or brainpower.<sup>34</sup> While this is a step in the right direction, Freier's application of the technique still considers only the negative aspect of shock, where other nations or forces gain an advantage that requires the United States to catch up.

In another work on the subject of shock, Freier encourages a process of horizon scanning as a low-cost solution to address this planning gap.<sup>35</sup> He proposes the Department of Defense and its components engage outside entities to identify disruptive shocks in a way that focuses on the competitive domains unique to each component.<sup>36</sup> Strategic planning processes

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31. Freier, *Known Unknowns*, 1, 14, 20.

32. M. Chris Mason, "Strategic Insights: Better Late than Never," Strategic Studies Institute (website), October 23, 2018, <https://ssi.armywarcollege.edu/articles/articles-2018/better-late-than-never/>.

33. Freier, *Known Unknowns*, 20.

34. Freier, *Known Unknowns*, 11.

35. Freier et al., "Restore 'Shock' in Strategic Planning," 2.

36. Freier et al., "Restore 'Shock' in Strategic Planning," 6.

incorporating such horizon scanning can at least make the known unknown foreseeable with enough detail that planners and leaders can justify devoting resources to the consideration of branches and sequels to the main plan.<sup>37</sup>

Beyond the fiscal hesitancy surrounding attempts to put planning rigor around speculation, Freier asserts “curiosity about and investigation into the unconventional and the unknown” are somewhat countercultural for the Department of Defense.<sup>38</sup> Advocacy for consideration of positive strategic shock in DoD planning represents a more speculative and less obviously urgent need than anticipating an adversary’s shocking, zero-sum technological advances. As such, and as with any idea that requires fiscal input and a change of thinking, the consideration of positive strategic shock will meet with more resistance from the Department of Defense, even though it does form a logical extension of Freier’s proposition.

Two points from Schwartz’s *Inevitable Surprises* add rigor and criteria for positivity to this approach to framing a process for thinking about positive strategic shock. First, Schwartz identifies four conditions stemming from science and technology that contribute to strategic change. If applied to the third-party competitive analysis recommended by Freier, a process watching for the convergence of these conditions could help the Department of Defense identify at an early stage potential domains within which to expect positive strategic shock. Passive scanning of this sort would also prevent early and speculative commitment of resources. The conditions Schwartz identifies are: the emergence of scientific anomalies, the development of new instruments that detect phenomena never before observed, comparatively rapid and effective communication among scientists, and a culture that values and rewards scientific and technological research.<sup>39</sup>

Oddly enough, earlier in *Inevitable Surprises*, Schwartz points out a fifth condition (omitted from his later list) that is an even better indicator of a non-zero-sum or positive situation—the presence of trust. It should therefore represent a way to distinguish positive shock from a negative one early in the horizon-scanning process. Schwartz mentions trust in the context of globalization, venturing the quantity of technological advancement and the quality of it depends on trust and mistrust at several levels: between businesses, at the level of individual investors and financial institutions, at the consumer level, and between governments. Trust creates the possibility of greater connectivity that supports at least two of the bullets

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37. Freier, Hume, and Schaus, “Restore ‘Shock’ in Strategic Planning,” 5.

38. Freier, *Known Unknowns*, 27.

39. Schwartz, *Inevitable Surprises*, 162–65.

in Schwartz's four-point science and technology scanning criteria: rapid and effective communication and the presence of a culture that values science and technology.<sup>40</sup>

A competitive and cooperative horizon-scanning analysis using all five of these conditions can identify hotspots for positive strategic shock. It should watch for scientific anomalies, new instruments for phenomena detection, rapid and effective communication, the presence of a political and economic culture rewarding science and research, and a high degree of trust among organizations and individuals. Whether a shock is an unknown unknown or can be extrapolated based on emerging trend lines making it a known unknown matters less than embracing a process that watches for these developments.

The DoD operational-design methodology is the obvious candidate for incorporating Freier's horizon scanning and Schwartz's conditions. Operational design already involves reviewing and reframing based on evolving conditions, though it neither excludes nor requires consideration of strategic shock.<sup>41</sup> The addition of a step in which planners scan the operational environment for potential strategic shock using Schwartz's criteria could become a simple and cost-effective way to formalize consideration of strategic shock in the DoD's current processes.

In addition to contributing this useful set of conditions to the horizon-scanning methodology, Schwartz proposes the previously discussed methodology of reframing a problem set to account for shock. He explains reframing through the examples of immigration in Europe and IBM's reorientation away from selling mainframe systems to providing consultative services.<sup>42</sup> Although this technique does not assist planning efforts in the same way as horizon scanning or the barbell method, DoD strategists should consider reframing as a useful way to recover from strategic shock. More specifically, reframing brings non-zero-sum thinking into play by looking for ways to create a win-win situation from a shock. What Schwartz extrapolates from both the immigration scenario and the IBM business model is the tendency to return to the status quo and the flexibility and adaptability within an organization to take a shock, view it in retrospect, and find and maximize the non-zero-sum potential of the new paradigm. In the immigration scenario, Schwartz articulates the zero-sum and non-zero-sum perspectives by juxtaposing and correlating the consequences

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40. Schwartz, *Inevitable Surprises*, 83.

41. JCS, *Joint Planning*, Joint Publication (JP) 5-0 (Washington, DC: JCS, 2020), iv, 5, [https://www.jcs.mil/Portals/36/Documents/Doctrine/pubs/jp5\\_0.pdf](https://www.jcs.mil/Portals/36/Documents/Doctrine/pubs/jp5_0.pdf).

42. Schwartz, *Inevitable Surprises*, 12, 49, 67–69.

of one's beliefs about immigration with one's beliefs in the limits, or lack thereof, of societal wealth.<sup>43</sup>

Rather than forcing itself back to status quo, Schwartz advocates for Europe to adopt the second non-zero-sum perspective, which he models on the then US policy. He thereafter uses the United States' edge in creativity and entrepreneurship as proof that such reorientation would "solve" the strategic shock of the European immigration issue.<sup>44</sup> This reorientation turns negative shock into positive shock and provides a model DoD strategic planners could use, rather than attempting to anticipate shock, to build positive shock-aware branches and sequels.

Earlier, several examples of positive strategic shock (vaccines, the Internet, and refrigeration) were mentioned to ground the discussion and show how shocks can be strategic and non-zero-sum. The fact that vaccines, the Internet, and refrigeration became positive is clear in hindsight but may not have been clear at the moment of their invention. These innovations may not have been adopted and their impact may not have been so significant and strategic without some of Schwartz's conditions for adaptation being operative, especially the conditions of trust, rapid communication, and a culture that rewards scientific and technological achievement. Uneven implementation rates and the impact of these examples and other such positive strategic shocks across cultures and communities support this supposition.

Similarly, IBM was able to use a shift to non-zero-sum thinking to solve the problems it faced at the advent of the personal-computing revolution. The inherently positive shock of powerful home- and desktop-computing options changed the nature of work. Rather than trying to force those consumers into a model that had worked previously for IBM, the company survived as a business because it recognized the non-zero-sum nature of the change. It understood it might lose market share overall, but the aggregate size of the computing industry would grow to such a degree that its profits could increase even with a more modest and specific slice of the market.<sup>45</sup> The same dynamic is operative for the Department of Defense, but it is not a one-to-one comparison. The dynamic manifests differently because the connection between the Department of Defense's constituency and

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43. Schwartz, *Inevitable Surprises*, 49.

44. Schwartz, *Inevitable Surprises*, 49.

45. Schwartz, *Inevitable Surprises*, 12.

its problem set is less immediate than the one between a business and its customers.

In business, clearly understanding the customer is a critical component of success, extending deeply into any successful company's processes and products, since customers can rapidly vote (so to speak) on such processes and products with their purchasing power.<sup>46</sup> While the Department of Defense clearly knows its customers, the business model by which those customers dictate their interests is not as straightforward as an exchange of capital.

The DoD's process involves translating guidance and strategic direction through the slow filter of representative democracy where outcomes can become muddled as they compete with values, debates, and forces other than voters' direct input.<sup>47</sup> Additionally, the Department of Defense does not enjoy the luxury of new customers in the same way a business might, were it to innovate. Instead, the Department of Defense has the same customers who engage in an ongoing reassessment of their values. Reframing, for the Department of Defense, becomes a unidirectional endeavor because it lacks the feedback loop of customers voting with their purchasing power. It is reactive to national-level strategic guidance and, thereafter, communicates its direction and actions to its customers when those customers cannot use their purchasing power in as unambiguous a way as they would in a business matter.

One speculative scenario for the Department of Defense that could benefit from a similar reframing approach might be movement into what some economists call a "post-scarcity economy," one where advances in critical economic drivers, such as energy and food production, make possible a non-zero-sum economic system.<sup>48</sup> In this situation, one indicator of aggression might be the incitement to a false sense of scarcity. While economic or production measures could deflate such a false proposition in a whole-of-government approach, security structures like the Department of Defense could also prepare branches and sequels with flexibility and adaptability that recognize the positive, non-zero-sum nature of such a development and actively oppose the aggression of false incitement. This example of anticipating and reframing a potential shock could help the Department of Defense tailor its reactions in a way that supports the emerging shock and contributes to the non-zero-sum phenomena. Yet, to do so,

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46. Gilbert, "Disruption Opportunity."

47. Erik Olin Wright, *How to Be an Anticapitalist in the Twenty-First Century* (London: Verso, 2019), 8.

48. Philip Sadler, *Sustainable Growth in a Post-Scarcity World: Consumption, Demand, and the Poverty Penalty* (Surrey, UK: Gower Publishing, 2010), 7.

the Department of Defense would first need to be aware of the shock, recognize it as potentially or likely positive, and then act accordingly.

The third methodology, the barbell in Taleb's *The Black Swan*, accounts for the negative and positive ends of the spectrum. In its simplest format, Taleb frames the barbell approach as the need to be "robust to negative Black Swans and exposed to positive ones."<sup>49</sup> Robustness combats negative strategic shock by building redundancy and survivability for systems in an organization, so when a negative shock occurs, those systems survive and help the organization recover toward the status quo. On the other end of the spectrum, Taleb recommends organizations maximize and optimize exposure to positive strategic shock, given the unpredictable and temporal nature of Black Swans.<sup>50</sup> This call to create a diversity of opportunity on the positive end of the spectrum dovetails well with Freier's advocacy for horizon scanning but goes beyond it in its encouragement of bottom-up awareness mechanisms. In fact, horizon scanning and the barbell method complement one another; horizon scanning works for the known unknown because it begins with identification of a trend line, and the barbell method applies to the unknown unknown where trend lines remain speculative.

An example of a process already employed within the Department of Defense involving scanning and exposure at the operational level fitting within Taleb's barbell approach is the effort of the Center for Army Lessons Learned (CALL). The center provides a bottom-up funnel for ideas at the tactical and operational levels.<sup>51</sup> Taleb's concept of exposure is closer to what the Center for Army Lessons Learned does than Freier's chartered third-party competitive analysis, though the two models likely would support each other in practice.

Pushing the identification of new, potentially shocking technological and organizational solutions down to the user level allows the process to iterate more quickly, reducing costs and risks and facilitating a propagation of the best ideas without committing institutional weight. Rather than looking at technology as determinant, which would be easier from a predictive standpoint, the Department of Defense should recognize that most organizations are unsure of what to do with a particular piece of technology until it undergoes a period of experimentation and adaptation by end users.<sup>52</sup>

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49. Taleb, *Black Swan*, 48.

50. Taleb, *Black Swan*, 337.

51. Michael Benvenuto, "Why the Center for Army Lessons Learned Is More Relevant than Ever (and How NCOs Can Harness This Resource)," *NCO Journal* (Fort Leavenworth, KS: Army University Press, September 2018), 1–3, <https://www.armyupress.army.mil/Portals/7/nco-journal/docs/CALL.pdf>.

52. Greg Satell, "4 Innovation Lessons from the History of Warfare," *Forbes* (website), March 14, 2015, <https://www.forbes.com/sites/gregsatell/2015/03/14/4-innovation-lessons-from-the-history-of-warfare/?sh=2987828573f3>.

Maximum exposure of end users to new technology allows them to determine its best value, which lies at the heart of Taleb's barbell approach. This approach is more cost-effective than speculative top-level DoD endeavors to anticipate technological and organizational shock.

The third portion of Taleb's barbell model applies to the middle area, the handle of the barbell figure. He radically de-emphasizes the so-called safe middle ground, which he asserts is rife with prediction errors.<sup>53</sup> Since more conservative investors or organizations feel safest with risk measures developed within—and therefore only applicable to—this middle ground, they leave themselves exposed to extreme fluctuations of risk on either end of the barbell—negative and positive shocks.<sup>54</sup> Taleb further asserts that almost all change and growth occur due to shocks on either end of this spectrum, not just known unknowns but the truly unanticipated Black Swans.<sup>55</sup> If, as Freier says, the Department of Defense operates almost exclusively within the safe middle area, then it misses both areas of learning.<sup>56</sup> The DoD's robustness—that is, its redundancy and survivability—is a product of an environment of ongoing reactivity to negative strategic shock. While that robustness is good, it misses the other end of the learning spectrum by overlooking the possibility of intentional orientation toward positive strategic shock.

Taleb puts an exclamation point on this theory when he discusses the strategy he employs for investment. This strategy involves taking risks when he anticipates exposure to positive Black Swans, being conservative around negative Black Swans, and ignoring the flawed middle. It seems simple enough, yet he demonstrates that it is the exact opposite of what other investors do. They use "flimsy theories to manage their risks and put wild ideas under 'rational' scrutiny."<sup>57</sup> Whether this method extends to decision making in the Department of Defense would form a good subject for follow-on analysis. Based on Freier's assessment of the DoD's lack of incorporation of strategic shock in planning, it seems the Department of Defense follows a logic similarly biased toward known risks extrapolated from models of linear rather than shock-based learning.

Antulio J. Echevarria II and Huba Wass de Czege advocate for the Department of Defense to orient itself toward positive ends while recognizing the pursuit of positive opportunities will require more short-term costs

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53. Taleb, *Black Swan*, 333–34.

54. Taleb, *Black Swan*, 333.

55. Taleb, *Black Swan*, 451.

56. Freier, *Known Unknowns*, 13.

57. Taleb, *Black Swan*, 451.

in terms of resources and planning.<sup>58</sup> Their advocacy complements Freier's case for considering shock more fully, though Freier does not specify the need to account for shock's positive aspect. Combining these positions, the need for relatively low-cost planning methodologies that allow the Department of Defense to posture for strategic shock and prepare for both its positive and negative aspects becomes apparent. Horizon scanning, reframing, and the dual ends of the barbell of exposure and robustness are all low-cost methods to incorporate positive strategic shock into DoD planning processes.

The Department of Defense can quickly and efficiently adopt these processes by taking the following steps. First, it should incorporate a few key indicators of potential shock (such as certain convergences of scientific and technological indicators) in chartered third-party competitive analyses and operational design. Second, it should actively plan branches and sequels that give leaders time and space to reframe shocks in a non-zero-sum manner. Third, the Department of Defense should leverage and create capabilities similar to CALL to reward the "up-funneling" of strategically shocking innovation for quick and wide adoption in an iterative, entrepreneurial manner. These measures should be taken while continuing to build robust systems through traditional means to prepare for the negative aspects of shock. Finally, incorporating scanning, framing, and methods for exposure to positive strategic shock would form useful additions to existing educational programs at the strategic level (such as Joint Professional Military Education Phases I and II) and within lower levels of military education where frontline leaders should be exposed to indicators of emerging strategic shock. These recommendations will encourage leaders and planners to embrace the idea that the unknown and its environment of negative and positive

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58. Antulio J. Echevarria II and Huba Wass de Czege, *Toward a Strategy of Positive Ends* (Carlisle, PA: US Army War College Press, 2001), ix, <https://press.armywarcollege.edu/monographs/105>.

uncertainty are the world's, and hence the Department of Defense's, predominant vehicle of change.

## Conclusion

Challenges that the Department of Defense would face when implementing some or all of these recommendations could include the following.

- First, a small budgetary and administrative burden would accrue in order to create CALL-like capabilities or programs to sense and reward the “up-funneling” of innovation.
- Second, educational programs have finite bandwidth and many competing priorities for the attention and instruction of students, fitting in blocks of theory around shock in all its forms should not be problematic except insofar as it would require reprioritization of other material.
- The third, and easiest, would be to include a requirement in future horizon-scanning third-party analyses and in the operational-design process for a consideration of the elements that could indicate upcoming disruption—trust within scientific communities, the emergence of scientific anomalies, the development of new instrumentation, increases in effective communication, and the presence of political and economic culture valuing science and research.

These recommendations offer a range of approaches that avoid futile efforts to predict the unknown unknown while posturing the Department of Defense to take advantage of the positive and negative aspects of shock.

The implication of not adopting a mindset oriented to shock, of which positive strategic shock is an overlooked subset, is that decisions will derive from safe and predictable, but incorrect prognoses based on trend lines and other flawed statistical approaches. Shock on both ends of the spectrum, negative and positive, creates the greatest opportunities for growth and success. Embracing methods to deal with shock (such as the barbell approach, the horizon-scanning methodology, and educational improvements to teach shock in existing curricula) will be healthy for the Department of Defense's planning processes and provide a competitive advantage over enemies who think more linearly in a less revolutionary manner.

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