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David J. Katz

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## Multidimensionality: Rethinking Power Projection for the 21st Century

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David J. Katz

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**ABSTRACT:** This article argues American military strategists must incorporate multidimensional power projection into their planning processes to counter adversarial actions by gray-zone actors. By developing a more complete concept of power projection, the United States can apply its resources more effectively.

The United States faces coercive gradualism in the South China Sea, nuclear provocation by a rogue state on the Korean peninsula, and gray-zone aggression in the Ukraine and the Levant. In these challenges, our adversaries purposefully occupy the space between war and peace. They negate US military advantages by operating below the threshold of armed conflict and through means designed to avoid, or be immune to, combat power. America's deterrence posture is likewise becoming irrelevant because its adversaries operate successfully without resorting to war.

At root, these diverse challenges target Pax Americana—the networks of allies, systems of international diplomacy, commerce, and law, as well as large swaths of territory and the resources they encompass. Without a redesign of American global strategy, these networks and resources could be lost. Accordingly, campaign planning must unify power projection across all dimensions to press US advantages, defeat adversaries, and maintain the desired strategic balance. In summary, the United States must campaign against adversarial states and nonstate actors, organizations, and individuals. The United States must successfully operate in environments of intentional ambiguity, opacity, and asymmetry, and do so without its most powerful weapons.

America's rivals use various types of unrestricted warfare to achieve a competitive, risk-adjusted advantage.<sup>1</sup> To defeat these actors, the US concept of power must expand to encompass an almost unlimited array of dimensions of power such that the lines between hard and soft, kinetic and nonkinetic will blur. The US concept of power projection must expand from direct source-to-target frameworks and encompass indirect and intermediated projection through networks and systems. America must be able to orchestrate the interactions between its power and its projection of that power on guidance, delivery, and effects by employing spatial, nonspatial, hybrid, and complex projection means.

Mr. David J. Katz works as a senior analyst at US Special Operations Command, J35 Transnational Threats Division, Counter Threat Finance. A West Point graduate, he served in the US Army as an infantry officer and Green Beret captain. He also worked as an institutional investor and advisor before founding his own firm that provided advanced analytics on more than \$3 billion of clients' private equity investments.

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1 Qiao Liang and Wang Xiangsui, *Unrestricted Warfare* (Beijing: PLA Literature and Arts Publishing House, 1999).

For these reasons, American analysts, planners, and practitioners require a framework that enhances exploitable advantages over our adversaries and that supports the design, development, and execution of campaigns that capitalize on those advantages. This framework must integrate power projection at its most granular: payloads combined with projection vectors in specific dimensions, in a timely manner, to form global campaigns of joint distributions of power across multiple dimensions. This model must combine the arrays of power with the mechanics of projection by vector, through networks, and across systems while accounting for impediments like opacity, agency, and asymmetry.

### **Multidimensionality**

We live in a multidimensional world. Typically, we campaign on land and sea and in air and space. But information has become a new campaign front. It challenges us to think beyond geographically tethered information to nonspatial information and from singular, granular data to large scale, millennia-old nontangible systems like religion, finance, and diplomacy as means for power projection. Multidimensionality exists, in a nascent form, within current military planning as DIMEFIL (diplomatic, information, military, economic, financial, intelligence, and law enforcement). A complete spectrum of power projection extends DIMEFIL infinitely to include all dimensions offering all exploitable advantages, whether structural or transient.

Power is applied to a target in order to bring about a desired change in its state. Power projection is the process of delivering single or multiple instances of power within a dimension. Multidimensional power projection is this process extended across multiple dimensions and described through four essential elements: class, source, payload, and vector. *Class* defines the behavior of power against a target's state. Both a bullet driven by gunpowder and a bayonet driven by muscle-power deliver kinetic energy to a target, thereby changing its state.

The behavior of the bullet and the bayonet against the target is kinetic, and accordingly, their class is kinetic. In one case, the *payload* is a bullet traveling along a ballistic path. In the other, a bayonet follows the arc of human physiology. Both the bullet and the bayonet are payloads; the path and the arc are projection *vectors*. A *source* is the initiator of an instance of power projection—shooting a bullet, thrusting a bayonet. A soldier, a policeman, and a criminal each possess and can initiate an instance of kinetic power projection.

### **Projection Vectors**

Projection vectors implement a class of behavior on a payload within a specific dimension. The pistol's barrel directs kinetic force (class) applied to a bullet (payload) creating a ballistic path (vector) within a kinetic dimension. An ambassador (source) hand-delivering (vector) a demarche (payload) to a rival's representative (target) is an instance

of diplomatic power, formal communication by a sovereign entity in a diplomatic dimension.

Projection vectors, like all vectors, have an angle and a length. Direct bilateral projection, from source to target, is a zero-angle vector. We tend to think of power projection as a single instance of a payload traveling a vector from source to target, like a package delivered by a courier or an artillery shell fired from a cannon. But force can be applied on a payload by the target, pulled rather than pushed. If the target has an affinity for something, perhaps bulk cash, and a payload is designed to contain or display such characteristics, the target may pull, move, or capture the payload by expending resources in the projection dimension. Absent applied force, a payload remains static. A payload in motion tends to remain in motion so long as the forces applied to it exceed the friction of forces along its path.

## **Networks**

In simple terms, networks are collections of entities and connections (nodes and edges). Without networks, projection remains bilateral. Networked power projection offers a multiplicity of paths to the target, which may include indirect, nonspatial, and complex multidimensional paths. Multiple paths in multiple dimensions require multiple vectors, each operating within the dimension of the connection between networked entities. Networked power projection delivers a number of offensive advantages such as expanding the number of geometric paths that make defense increasingly difficult. The use of friendly, neutral, and hostile intermediating entities may mask power's origin.

Networked multidimensional power can come from areas and in forms outside of the antagonist's expectation, awareness, or collection capabilities. Projecting power through a network requires understanding how payloads interact with intermediating entities, possibly requiring semiautonomous or autonomous guidance for the payload. Networked power projection also requires planning for the comparative velocities of each payload. Multidimensional shock effect, where payloads from multiple dimensions arrive on target at the same time amplifies results and is a planning consideration.

## **Systems**

Systems are subsets of networks. Manufactured systems, like those of Pax Americana, are created and maintained because they offer a positive net benefit, obtained through transformation, to their participants. Systems—such as the global maritime commons—are not necessarily bound by geographic or spatial limits. Systems—such as transnational supply chains that manage factors like risk, demand, and ownership—have a nonspatial aspect. Once created, these systems tend toward stability as a means of preserving their benefits, and they react against changes that pose a risk to their purpose and their transformative

processes. Consequently, they can be harnessed through their tendency to maintain their present state.

Systems contain the potential for several types of systemic failures: cascades, contagions, and “black swans.” Cascading failures occur when one fault within a system causes subsequent multiple failures. System contagions occur when a system’s nodes, edges, and edge characteristics are exploited to propagate effects antithetical to its purpose.

The Great Depression (1929–39) offers a contagion example. When a local bank failed, all its debt, typically borrowings from other banks, did not get repaid. The holders of that debt, regional banks, then failed and their debts had to be written off. When regional banks failed, their creditors, money-center banks, either failed or sold their debt and ceased lending. The resulting credit contraction spurred more local and regional bank failures. Generally, contagions spread an infection through horizontal, peer-to-peer relationships, while cascade failures occur in vertically integrated systems like supply chains.<sup>2</sup> Black swans are unpredictable outliers that are typically more than three standard deviations out from a distribution’s mean: “Nothing in the past can convincingly point to [their] possibility.” Yet these events, such as the terrorist attacks of September 11, 2001, and the Fukushima accident, make “an extreme impact.”<sup>3</sup>

### **Illustrating Multidimensionality in the Middle East**

Multidimensional campaign planning can take place once the analyst, planner, or practitioner develops an appreciation for the class, source, payload, and vector of power projection, both inside and outside networks and systems. With this understanding, the Israelis might consider employing a persistent, multidimensional campaign against the Iranian state to interdict, undermine, or collapse the missile and rocket supply chains inside Iran instead of relying upon habitual air-strikes in Syria.

Likewise, Saudi Arabia could construct a financial cordon sanitaire to constrain Iran’s use of external financial proxies such as the Omani rial as well as to interdict bonds issued to develop the South Pars gas field.<sup>4</sup> Added to a range of physical, informational, financial, kinetic, and electronic dimensional campaigns, Saudi Arabia and Israel jointly may be able to contain Iranian actions while creating a series of self-amplifying cascade failures to roll back Iran’s foreign adventurism.

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2 Jeffrey D. Sachs, “Blackouts and Cascading Failures of the Global Markets,” *Scientific American*, January 1, 2009.

3 Nassim Nicholas Taleb, “The Black Swan: The Impact of the Highly Improbable,” *New York Times*, April 22, 2007.

4 *Majority Report on the Review of U.S. Treasury Department’s License To Convert Iranian Assets Using the U.S. Financial System by the Permanent Subcommittee on Investigations* (Washington, DC: Senate Committee on Homeland Security and Governmental Affairs, 2018).

## Using Multidimensionality in the South China Sea

China's dominance in the South and East China Seas appears to be a "wicked problem" when viewed conventionally.<sup>5</sup> China's segmentation of the South and East China Seas from the global maritime commons included constructing in-depth missile and submarine coverage; using the deniable actions of the maritime militia's "little blue men" to harass, ram, and sink civilian and sovereign ships; declaring an air defense identification zone; and building militarized islands in the Spratly and Paracel Islands.<sup>6</sup>

China established a corresponding legal basis for its strategy and actions in 1992, 1996, and 1998 when it crafted legislation to assume regulatory and maritime law enforcement jurisdiction. With its own sovereign claim and subsequent legal justification, China has pursued operational jurisdiction of its near seas through civil maritime rights enforcement.<sup>7</sup> China's actions, all below the level of armed conflict, are creating two separate and ultimately incompatible systems—the Chinese dominion of its near seas and the international rule of the global maritime commons.

One example of system-level power projection appropriate for the situation in the South and East China Seas would be the US Navy maintaining maritime presence and movement as well as conducting information operations across legal, economic, and financial dimensions below the level of armed conflict. In this manner, the United States can help other countries in the region maintain a "free and open Indo-Pacific" to "win before fighting."<sup>8</sup> From a multidimensional perspective, Chinese strategy is based upon a profound and fundamental miscalculation that will ultimately cause its unraveling.

China's physical and legal segmentation of its near seas has resulted in a new system boundary that can be exploited to US advantage. On one side, the maritime commons is a globally scaled, integrated system of shipborne freight distribution, economic trade, and financial risk management whose physical passage is guaranteed under US stewardship and whose contractual redress operates under long-established, internationally accepted law. On the other side, the emerging Chinese dominion is an extension of recent Chinese law backed by regular and irregular force. Ninety-five percent of China's

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5 John C. Camillus, "Strategy as a Wicked Problem," *Harvard Business Review*, accessed April 18, 2019.

6 Department of Defense (DoD), *The Asia-Pacific Maritime Security Strategy: Achieving U.S. National Security Objectives in a Changing Environment* (Washington, DC: DoD, 2015), 16; Andrew S. Erickson and Kevin Bond, "Dredging under the Radar: China Expands South Sea Foothold," *National Interest*, August 26, 2015; Asia Maritime Transparency Initiative, "Update: China's Big Three Near Completion," Center for International and Strategic Studies, June 29, 2017; and Office of the Secretary of Defense (OSD), *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2018*, annual report (Washington, DC: OSD, 2018), 12.

7 M. Taylor Fravel, "China's Strategy in the South China Sea," *Contemporary Southeast Asia* 33, no. 3 (December 2011): 293, 303.

8 *Hearing on the United States Indo-Pacific Command and United States Forces Korea*, 116th Cong. 12 (2019) (statement of ADM Philip S. Davidson, commander, US Indo-Pacific Command).

foreign trade is seagoing freight contributing more than \$2.2 trillion to China's gross domestic product; more than 50 percent of that trade crosses the maritime boundary.<sup>9</sup>

Using presence and movement, US maritime power projection can exploit system advantages short of armed conflict (Class: Physical; Source: US Navy; Payload: Short-term, random, maritime exclusionary zones on outbound China container ship routes inside the global commons and outside the force projection range of the Chinese navy; Vector: Military exercises and maritime law enforcement). These diversions increase the distances and the durations of container ship voyages—which in turn, increase the expenses for fuel, labor, and insurance—to deliver real-time boundary costs that can be matched to China's gray-zone actions. Russia's actions against ships bound for the Ukrainian ports of Berdyansk and Mariupol demonstrate the costs imposed by such actions.<sup>10</sup>

Even a single-day diversion increases the costs associated with keeping merchandise in inventory: the longer voyage not only prevents cargo from reaching its destination port and being sold on schedule but also drives up expenses resulting from financing acquisition costs and shipping fees within the supply chain. If the delays are significant, forward contracts, financial instruments used to safeguard against prices changing while merchandise is in transit, may even expire before the ship reaches port. Fortunately, extensions on these protections can be purchased—for a “small” fee.

The expenses resulting from the diversion can be amplified through financial power projection to deliver significantly higher costs to China's exports and gross domestic product. A military agency that requires bunker fuel, Military Sealift Command perhaps, could increase regional buys of the commodity, which is subject to financial speculation, immediately before exclusionary zones are established to drive the price of the resource up (Class: Financial, Source: Military, Payload: Cost increase, Vector: Purchase). Hedge funds and commodity brokers sensing a price movement caused by financial power projection may buy fuel futures hoping to profit from the price change, driving the price even higher. This scenario provides an example of planned financial-military power projection naturally stimulating the financial-commercial dimension.

A declaration by the US Department of State of increased risk in the western Pacific due to militant actions in China's near seas publicly justifies the military establishment of exclusionary zones to mitigate the risk associated with maritime exercises (Class: Diplomatic, Source: US State Department, Payload: Public declaration, Vector: Media). Such an action may result in insurance companies raising their rates, making maritime insurance more expensive and possibly more difficult to

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9 “China Trade Profile,” World Trade Organization, accessed March 12, 2019; David C. Gompert, Astrid Stuth Cevallos, and Cristina L. Garafola, *War with China: Thinking Through the Unthinkable* (Santa Monica, CA: RAND Corporation, 2016), 43.

10 Ihor Kabanenko, “Russia's ‘Boa Constrictor’ Strategy in the Sea of Azov: A Prelude to Amphibious Landings?,” *Eurasia Daily Monitor* 15, no. 89 (June 2018).



obtain. If risk along a transit route becomes greater, and consequently more expensive, the costs of shipping and financing goods on that route likewise increase, and forward contracts may become scarce. In this example, one instance of a maritime exclusion zone tees up potential cascades of additional power projections through the informational and financial networks integrated within the global maritime commons.

Although physical maritime diversions, by nature, affect the outbound merchandise shipped at the end of supply chains, payloads and projection vectors can also be designed for upstream processes related to manufacturing, logistics, or material handling. Interventions—such as buying or selling primary components of targeted supply chains, contracting services associated with paired logistics chains, and trading financial instruments of associated companies—could induce cascading economic and financial failures and contagions (Class: Financial, Source: Commercial, Payload: Stock-out/Supply Glut, Vector: Purchase order). In this context, shipping containers (onboard and in-port), freight space, bunker fuel, repair parts, stocks, bonds, insurance, loans, derivatives, futures, forwards, and swaps become targets. When physical maritime diversions target outbound container ships, ancillary power projections can target the individual components of China's export-driven supply chains.

The integrated, multidimensional power projection, which is all nonkinetic, demonstrates how America can extract real costs from China's export-driven economy. Furthermore, the United States has an inherent capability to scale the process and its effects through multiple exclusionary zones to escalate the effects from one container ship to many, one supply chain to many. Another benefit of brief maritime diversions is a lower probability of unwanted escalation than other physical interventions since such actions do not constitute a blockade nor an embargo and do occur outside the range of China's blue water navy as well as at the limit of its missile range. In this case, unified multidimensional power projection delivers a cost not a threat because it does not change "the distribution of power during the crisis."<sup>11</sup> Ultimately, any antagonist's ability to respond in kind to this scenario is limited to the reach of its physical power projection capabilities.

## Conclusions

Multidimensionality and its essential elements of class, source, payload, and projection vector offers a simple but abstract means for analyzing, designing, and modeling unified, multidimensional campaigns. It enables the tailored application of power using any and all exploitable advantages across a spectrum of cooperation, competition, conflict, and combat. Multidimensionality designed for networked and systemic power projection offers a number of advantages: multiple paths to the target; indirect, complex, and nonspatial paths; multiple

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<sup>11</sup> Branislav L. Slantchev, *Military Threats: The Cost of Coercion and the Price of Peace* (Cambridge: Cambridge University Press, 2011), 66.



projection vector types; and ballistic, semiautonomous, and autonomous guidance options.

In designing campaigns against states and their diffused nonstate power, our campaigns must join military, whole of governmental, and nationally sourced economic and financial power with extra national networks and systems. Our campaign planning must unify power projection across all dimensions to press our advantages, defeat our adversaries, and maintain our desired strategic balance. In an era of coercive gradualism, nuclear provocation, and gray-zone competition that purposefully occupies the space between war and peace, dimensionality may offer a better, more innovative and imaginative way to respond to some of the world's worst actors, while reducing risk and promoting peace.