Classical Deterrence Theory: Applicable to Maritime Counterproliferation Initiatives?

By Eric Taquechel
Abstract

Deterrence theory evolved during the Cold War nuclear weapons arms race environment in a nation-state context. Modern counterproliferation efforts focus on different kinds of WMD and sub-national adversaries. This article will discuss the evolution of deterrence theory, provide a brief overview of specific counterproliferation efforts, and apply principles of deterrence theory to these counterproliferation efforts. The main takeaway for deterrence scholars and counterproliferation practitioners is that more thought is needed to determine whether deterrence theory is an appropriate theoretical bedrock for modern maritime counterproliferation strategy against sub-national adversaries.

Introduction

Weapons of mass destruction (WMD) counterproliferation efforts are numerous. Two, in particular, that focus on the maritime supply chain are Customs and Border Protection’s Container Security Initiative (CSI) and the State Department’s Proliferation Security Initiative (PSI).

This essay will explore how principles from classical deterrence theory might support maritime supply chain counterproliferation efforts. The focus is on asymmetric threats such as terrorists and rogue states exploiting the maritime supply chain, rather than on classical nation state nuclear deterrence. This essay will therefore:

1. Discuss the evolution of deterrence theory,
2. Provide a brief overview of specific counterproliferation efforts, and
3. Apply principles of deterrence theory to these counterproliferation efforts, rendering an opinion on the applicability of said principles.

Importantly, this essay will apply principles of deterrence theory that evolved during the Cold War nuclear weapons arms race environment to counterproliferation efforts that focus on WMD broadly, meaning chemical, biological, radiological and nuclear weapons. *This does not suggest these principles are inapplicable to modern counterproliferation initiatives simply because they evolved in a nuclear deterrence context. Instead, they must be evaluated on their own merit.*

Audience

The intended audience for this essay includes scholars of deterrence theory and counterproliferation initiative practitioners and policymakers.
Evolution of Deterrence

Deterrence theory, specifically with respect to nuclear weapons, has its roots in post-WWII analysis of US-USSR nuclear postures. That body of theory has expanded as more states pursue nuclear weapons in the “second nuclear age.” Often absent from this discussion is whether counterproliferation efforts to reduce maritime supply chain WMD transfer risk should rely on classical principles of deterrence theory. There is a rich body of post-9/11 deterrence literature, but arguments as to whether deterrence theory should underpin specific counterproliferation initiatives are scarce.

While much of the world relied on mutual deterrence during the Cold War, new strategies are required to deal with terrorist groups who believe they have little to lose and much to gain by acquiring and using WMD. Terrorist groups are supposedly actively pursuing WMD, and are not likely to be deterred from using them. Taquechel et al. claim that terrorists may exploit the maritime supply chain by transferring a WMD into the U.S. Given these two claims, we should further explore the applicability of deterrence theory to help us understand “how and why” these initiatives reduce risk of this occurrence. CSI and PSI doctrine do not emphasize deterrence as a theoretical bedrock, but we want to explore deterrence in more detail to evaluate the extent to which the doctrine might evolve to emphasize deterrence.

Contribution to Literature

This essay will apply deterrence theory principles to specific maritime counterproliferation efforts in a novel way.

Chalmers claims that nuclear deterrence alone may have been insufficient to prevent nuclear war on its own, and further advocates that deterrence is only one of several tools employed to prevent war. However, Chalmers neither discusses specific counterproliferation initiatives nor applies principles of deterrence theory to said initiatives.

Nacht argues that nonproliferation is deterring acquisition of WMD and counterproliferation entails efforts to persuade adversaries to give up WMD capability after acquisition. This simplification omits the discussion of the possibility that counterproliferation efforts serve a deterrent purpose (to forestall proliferation) as well as a compellence purpose (to reverse proliferation). If a country acquires WMD but cannot ship or use them due to successful interdiction efforts, that may deter continued acquisition efforts or even reverse current efforts.

Ellis claims that nonproliferation efforts have failed to prevent proliferation and thus counterproliferation efforts increase in importance but does not discuss specific counterproliferation efforts.

The Department of Defense Deterrence Operations Joint Operating Concept claims that extended deterrence enhances counterproliferation efforts by discouraging allies from developing their own capabilities, but does not elaborate on the specific nature of counterproliferation.
Thus, the intended contribution of this essay is exploration of the applicability of specific principles of deterrence theory to specific counterproliferation efforts.

Overview of Counterproliferation Efforts

The Container Security Initiative has three primary goals:

1. To identify high-risk containers;
2. To prescreen and evaluate containers as early in the supply chain as possible, generally at the port of departure; and
3. To use technology to ensure rapid container screening without slowing down trade.

The Proliferation Security Initiative’s Statement of Principles is lengthy, but three notable excerpts follow. PSI participants agree:

1. At their own initiative, or at the request and good cause shown by another state, to take action to board and search any vessel flying their flag in their internal waters or territorial seas, or areas beyond the territorial seas of any other state, that is reasonably suspected of transporting such cargoes to or from states or non-state actors of proliferation concern, and to seize such cargoes that are identified;
2. To enforce conditions on vessels entering or leaving their ports, internal waters or territorial seas that are reasonably suspected of carrying such cargoes, such as requiring that such vessels be subject to boarding, search, and seizure of such cargoes prior to entry; and
3. If their ports, airfields, or other facilities are used as transshipment points for shipment of such cargoes to or from states or non-state actors of proliferation concern, to inspect vessels, aircraft, or other modes of transport reasonably suspected of carrying such cargoes, and to seize such cargoes that are identified.

For sake of exposition, this essay will make the U.S.-centric generalization that the CSI focuses on foreign ports, or “farther from target”, whereas the PSI focuses on interdiction efforts “closer to target” – in territorial seas or against inbound aircraft.

Each deterrence principle will be evaluated against an initial assumption that it supports or opposes application of deterrence theory to counterproliferation initiatives.

Support for Application of Deterrence Theory

Argument 1 – Applicability of Deterrence by Denial

One argument is that the prospect of interdiction or denial of transport means may deter proliferators from shipping a WMD through the maritime supply chain.
With regard to deterring terrorists, some argue the foot soldier who is willing to blow himself up in a crowded marketplace is probably undeterrable. However, deterrence may be possible against some terrorist network actors who have a clearer cost-benefit computation than other network elements.\textsuperscript{11}

If this latter point is true, increasing the prospect of interdiction would, in theory, deter elements of a risk-averse terrorist organization from exploiting the maritime supply chain. Deterrence by denial entails discouraging an adversary from taking an undesirable action by convincing the adversary that such efforts can be countered sufficiently to deny their benefit.\textsuperscript{12}

Therefore, denying the objective of successfully transferring a WMD through increasing the probability of encountering, detecting and interdicting it before it reached the U.S. might convince a risk-averse terrorist they could not achieve their objective. Since CSI and PSI both target vessels and aircraft before they reach their destination, it seems straightforward to argue that these initiatives deny adversaries their objective. Mission success is important and leaders are in some ways risk–averse.\textsuperscript{13} Thus, such interdiction efforts could lower supply chain exploitation probabilities, increasing risk of failure and therefore deterring by denial.

The counterargument is that terrorist groups may not be uniformly risk averse; Yang et al\textsuperscript{14} argue that rogue challengers dissatisfied with the status (quo) can choose strategically to take the risk associated with a nuclear pre-emption when they are not exposed to retaliation. This emphasizes the importance of persistent vigilance and longevity of these counterproliferation initiatives; denial must be successful over the long haul.

\textbf{Argument 2 – Applicability of Escalation Management for Irregular Warfare}

One deterrence principle is that escalation risks in irregular warfare are more diverse than during the Cold War. Consequently, the U.S. should execute a strategy that emphasizes judicial and diplomatic actions, including foreign assistance, and should avoid militarizing conflict if possible.\textsuperscript{15} Moreover, a fundamental paradox of irregular warfare is the need to employ deadly force in an essentially political struggle.\textsuperscript{16}

Efforts to improve maritime supply chain security constitute defensive measures and avoid militarizing the conflict, at first glance. These security measures may, in theory, deter smuggling by increasing the odds the terrorists will not achieve their objectives if the probability of WMD detection or interdiction increases. This may help contain terrorist efforts to escalate the conflict with the U.S. from conventional to nuclear, but may not necessarily deter the efforts to initiate supply-chain exploitation in the first place.

At second glance, it may not be evident that this principle applies to PSI. One of the statement of principles is that countries will search vessels in their own waters and will search aircraft at their airports. If we believe adversaries are more likely to respond with force to interdiction efforts “closer to target” than they are when faced with interdiction “farther from target”, one could argue interdiction efforts constitute escalation and the adversary equates use of force to a militaristic response.\textsuperscript{17}
CSI interdicts farther from the target, and terrorists may believe this is less of a loss because they have not yet invested the time and resources to achieve their objective. Once they have loaded a weapon aboard a vessel or aircraft and it is enroute its destination, the time and resource expenditure may increase the sunk-cost effect. Thus, the principle of escalation management for irregular warfare may not be generally applicable to maritime counterproliferation efforts.

Opposition to Application of Deterrence Theory

*Argument 1 – Applicability of Deterrence by Punishment*

One principle that may not apply to reducing maritime supply chain risk is deterrence by punishment. This may be the most direct way of manipulating an enemy’s cost-benefit calculus. However, punishment-based deterrence may lack credibility in a limited conflict if the adversary doubts that the other party has the capability or will to carry out a threat. If we believe that supply-chain exploitation is a “limited conflict”, and we believe that a terrorist organization attempting to exploit the maritime supply chain believes we will be unable to attribute responsibility for initiating the transfer of a WMD, deterrence by punishment might fail. Tracing responsibility back to the point where a WMD was loaded on a container in a foreign port could be a daunting task. Some foreign port facilities that load containers bound for the U.S. do not intrusively inspect the containers, or break the seal and look inside. Even if they do, they may not open individual partitions within the container, where a WMD might be stored. Furthermore, if they do find a weapon, they could track the responsible party by the manifest or bill of lading, but then they would have to establish a linkage between that party and a terrorist organization. In addition, assuming all that, they would have to be willing to share that information with the U.S. to establish a basis for attribution.

This might be sufficient justification for nuclear or conventional retaliation. If the organization responsible for attempting to secrete the weapon was contained within the country whose port authorities discovered the weapon, kinetic force against that organization might be justified. Fisher proposes the commitment trap – if we are going to threaten to use nuclear weapons in retaliation against terrorists, we would obligate ourselves to do so if it actually happens, otherwise we lose credibility.

In the case of U.S. retaliation for an attempted WMD transfer or successful detonation, if the purportedly responsible non-state actor (NSA) is located outside U.S. borders, it would be harder to gather intelligence. However, it might be easier to stomach collateral damage from a retaliatory response, especially if the U.S. could claim that another state’s leadership is accountable for the NSA within its borders. This contrasts with the perceived political fragility of the U.S., to wit: its sensitivity to civilian casualties, which may increase the attractiveness of adversary escalatory actions.

These complications pose challenges to relying on the threat of deterrence by punishment as part of a maritime counterproliferation strategy. More serious weaknesses emerge in punishment-based deterrence when there is significant asymmetry of stakes between parties to the conflict. Unless the culpable party can be identified, there is no “return-to-sender”
necessary condition for deterrence by punishment, making the stakes asymmetric. At first glance, this challenge is equally applicable to both counterproliferation initiatives. However, similar to the argument for limited applicability of escalation management for irregular conflict, the adversary might perceive a PSI-sanctioned interdiction in offshore waters as tantamount to escalation and therefore as punishment. Thus, it is not clear whether or not this principle is generally applicable to maritime counterproliferation.

**Argument 2 – Applicability of Escalation Dominance to U.S. Efforts**

Escalation dominance occurs when a combatant has the ability to escalate a conflict in ways that will be disadvantageous to the adversary while the adversary cannot do the same in return, because it has no escalation options or because the available escalation options would not improve the adversary’s situation.\(^{23}\) One can easily argue that efforts to smuggle a WMD into the U.S. in response to terrorist organization grievances against the U.S. constitute escalation dominance attempts. Moving from conventional aggression to nuclear aggression is escalation. However, should terrorists succeed in detonating a WMD on U.S. soil, we must consider the proportional response, and also analyze whether this warrants further escalation beyond a proportional response.

The previous discussion on limited applicability of deterrence by punishment applies here. The U.S. would have to attribute responsibility and then escalate in response, which lacks credibility due to its difficulty. Therefore, a terrorist group would achieve escalation dominance, but it would be difficult for the U.S. to do the same with respect to a WMD transfer scenario. Ironically, escalation dominance is most achievable when escalation management is of least concern. Escalation dominance is easier to achieve when confronting a state with limited conventional capabilities and no nuclear weapons.\(^{24}\)

This argument changes direction when we consider interdiction efforts as an escalatory step prior to weapon detonation, or if we shorten the timeframe for this scenario. If we believe an adversary interprets a successful PSI-sanctioned interdiction as successful escalation, then we have indeed achieved escalation dominance. In this scenario, escalation dominance may not be limited as originally presumed. Therefore, this may support the utility of deterrence theory as a basis for maritime counterproliferation efforts.

**Argument 3 – Applicability of Limited War Theory**

The theory of limited war posits that even in the most extreme conflict, participants usually respect formal or tacit escalatory thresholds.\(^{25}\) Deterrence becomes tenuous with the proliferation of WMD arsenals to dissatisfied nations or entities, thereby increasing the risk of war.\(^{26}\)

Classical “limited war” objectives may not constrain religiously motivated terrorist groups dissatisfied with the status quo. Fischer is unsure how to deter someone whose goal is to eliminate an adversary rather than to coexist.\(^{27}\)
It is also tempting to draw on principles of prospect theory, which argues decision-making is a function of frames of reference. Formal or tacit escalatory thresholds short of nuclear conflict may be irrelevant if an adversary’s reference point is successful WMD detonation on U.S. soil. This principle seems less applicable across both counterproliferation initiatives, drawing more on adversary goals and objectives than the nature of U.S. counterproliferation strategies. Such inapplicability detracts from the utility of deterrence theory as a bedrock for maritime counterproliferation initiatives.

**Argument 4 - Applicability of Escalation Dilemma**

The escalation dilemma claims that we may lack certain capabilities that may prompt adversaries to escalate in ways against which we lack proportionate responses. Consequently, we either allow painful enemy escalation to go unanswered, or respond with disproportionate escalation that may entail undesirable military or political cost.\(^{28}\)

Again, this references the challenges with the theory of deterrence by punishment in this context. If we have difficulty attributing responsibility through a diffuse supply chain with multiple nodes and actors, that increases the challenge in responding proportionally.

Alternatively, even if we interdict the WMD before detonation, the extent to which the supply chain was exploited up to the point of interdiction constitutes “letting escalation go unanswered.”

This said, we can argue for a nuance in the two counterproliferation initiatives. By this logic, less escalation goes unanswered when we interdict a WMD in a foreign port per the CSI, than if we interdict a WMD already bound for its destination in an aircraft or vessel. The proportional escalation for a PSI interdiction would be seizure of the weapon, and presumed arrest or death of the perpetrators, seizure of the vessel or aircraft, and investigation into those responsible. The proportional escalation for a CSI interdiction would be seizure of both weapon and container, and investigation into those responsible. From our perspective, such responses seem perfectly proportional to the adversary’s effort. However, there is no guarantee the adversary will respect such proportionality.

Moreover, from the adversary’s perspective, they may predict that an interdiction will create cascading effects, such as enhancing supply chain security at the expense of increasing supply-chain costs and slowing down commerce, an undesirable outcome. In a way, this constitutes unanswered “painful enemy escalation.”

Lowther argues for a diminishing marginal utility for deterrence efforts – we could protect everything but it would be cost prohibitive.\(^{29}\) Since this principle is applicable but poses a conundrum for the U.S., it decreases the utility of reliance on deterrence theory in this context. Therefore, this principle is applicable, and even though we have validated this aspect of the theory, the fact that it entails a dilemma for us creates challenges to accepting deterrence as a theoretical bedrock of maritime counterproliferation efforts. The validation of a theory does not guarantee we should rely on it.
Argument 5 – Limited Value of Quantifying Deterrence with respect to Supply Chain Risk Management

Tauechel shows that quantitative risk reduction analysis that accounts for “quantifiable deterrence effects” and risk reduction analysis that disregards such effects yield the same results, when modeling how to reduce transfer risk in the maritime supply chain. In brief, deterrence quantification has negligible value.

This approach extends classical deterrence theory to quantitative risk analysis but shows limited efficacy of deterrence considerations, suggesting additional challenges to incorporating deterrence theory into risk management of the maritime WMD transfer threat.

However, this approach focuses on the deterrent effects of improving WMD detection investments in U.S. ports. CSI and PSI focus on overseas and offshore interdiction efforts, so the claim that deterrence quantification adds little value to risk reduction efforts is premature here. Some argue deterrence via denial may have some limited effect but makes a minimal contribution to escalation management because terrorists can simply shift their attacks to lesser-defended targets. Additional analysis of supply chain risk reduction and deterrence would require consideration not just of expanded targets but of expanded supply chain nodes, increasing the mathematical complexity.

Summary of Deterrence Principle Applicability

As shown, some principles of classical deterrence theory may be more clearly applicable to these specific initiatives than other principles.

Deterrence by Denial is more clearly applicable. Interdiction efforts could lower supply chain exploitation probabilities, increasing risk of failure and therefore deterring by denial. The applicability of Escalation Management for Irregular Warfare is unclear and varies by initiative type. If we believe adversaries are more likely to respond with force to interdiction efforts “closer to target” than they are when faced with interdiction “farther from target”, one could argue interdiction efforts once the WMD is “closer to target” constitute escalation and the adversary equates use of force to a militaristic response, increasing the likelihood of adversary escalation and thus defeating deterrence. This may mean escalation management is more challenging for PSI efforts than for CSI efforts.

The applicability of Deterrence by Punishment is unclear. Attribution could be difficult, rendering the principle less applicable. However, an adversary might perceive a PSI-sanctioned interdiction in offshore waters as tantamount to escalation and therefore as punishment, which might increase the utility of deterrence by punishment.

The applicability of Escalation Dominance is unclear. An adversary may perceive interdiction efforts as escalation dominance attempts, thus deterring. However, attribution is difficult so the U.S. might be limited in its ability to dominate escalation; they might be “self-deterred” from attempting to achieve escalation dominance absent credible evidence of responsibility for the attack.
The applicability of Limited War Theory is unclear given religiously-motivated terrorists or those with a frame of reference that sees execution of a WMD attack as the only acceptable outcome. The applicability of Escalation Dilemma is unclear and varies by initiative type. Proportional escalation may be easier for interdiction a WMD in a foreign port, per the CSI, whereas it may be more difficult to maintain a perception of proportionality in a PSI interdiction.

The applicability of Quantification of Deterrence is unclear. It has not been sufficiently studied for overseas interdiction efforts at this time.

Conclusion

The elusiveness that irregular forces typically enjoy offers them opportunities to escalate against much stronger adversaries with less risk of destruction, and they do so when they believe escalation will work to their advantage. One might argue it is easier for terrorists to achieve escalation dominance by exploiting the maritime supply chain to transfer a WMD, than it is for the U.S. to respond.

A terrorist organization may easily conclude that successful WMD transfer and detonation within the U.S., a stronger adversary, would work to their advantage in terms of achieving mass casualties. Even if interdicted, subsequent increase in supply-chain security might cause economic losses, a victory to the adversary.

Nonstate actors have been deterred, often through methods that differ significantly from the Cold War tactics of holding at risk the assets presumed to be of highest value to the adversary. However, if deterrence theory only offers limited theoretical utility to maritime WMD risk reduction strategies such as those discussed here, the main takeaway for deterrence scholars and counterproliferation practitioners is that more thought is needed to determine whether deterrence theory is an appropriate theoretical bedrock for maritime counterproliferation strategy against sub-national adversaries. The CSI and PSI doctrinal statements do not explicitly discuss deterrence, so this essay elucidates on nuances of deterrence that might be applicable.

This essay chose a limited set of counterproliferation initiatives with a maritime supply chain nexus and selected from a limited portfolio of classical deterrence theory concepts. It is therefore premature to claim how valuable deterrence theory is to maritime counterproliferation efforts, and one principle may be applicable to one counterproliferation initiative while inapplicable to the next. Principles originally assumed generally applicable were shown to be less applicable to specific counterproliferation initiatives writ large, whereas principles originally assumed generally inapplicable were shown to have some utility in specific cases.
About the Author

Eric F. Taquechel is a U.S. Coast Guard officer with experience in shipboard operations, port operations, critical infrastructure risk analysis, emergency planning and readiness, operations analysis, strategy/budgeting process support, and international port security management. He has authored and co-authored various publications on risk, resilience, deterrence, and performance metrics in HSAJ, the Journal of Homeland Security and Emergency Management, and IEEE. Most recently, he published “Risk Reduction and Deterrence: Two Sides of the Same Coin?” in HSAJ. His paper “A Right-Brained Approach to Critical Infrastructure Protection Theory in support of Strategy and Education: Deterrence, Networks, and Antifragility” was a Best Paper presented at the CHDS’s 2017 10th Annual Homeland Defense and Security Education Summit. Taquechel has taught courses on critical infrastructure protection and is a FEMA Master Exercise Practitioner. He holds a MPA from Old Dominion University with a graduate certificate in public procurement, a master’s degree in Security Studies from the Naval Postgraduate School, a graduate certificate in Countering Weapons of Mass Destruction from Missouri State University, and a BS from the U.S. Coast Guard Academy. He may be reached at eric.taquechel@gmail.com.

Disclaimer

The original opinions and recommendations in this work are those of the author and are not intended to reflect the positions or policies of any government agency.

Bibliography


Notes


2. Ibid.


16. Ibid.

17. We assume the adversary does not differentiate between use of force (law enforcement) and rules of engagement (military action) as the U.S. does.


22. Ibid.

23. Ibid.

24. Ibid.

25. Ibid.


27. Fisher, “Deterrence, Terrorism, and American Values.”


32. Ibid.


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