Torts and Terror: Rethinking Deterrence Models and Catastrophic Terrorist Attack

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ESSAY

TORTS AND TERROR: RETHINKING DETERRENCE MODELS AND CATASTROPHIC TERRORIST ATTACK

JAMES KRASKA

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“In theory, there is no difference between theory and practice, in practice there is. . .”

—Yogi Berra

I. THE THREAT OF CATASTROPHIC NUCLEAR TERRORISM

In a precursor to the congressionally mandated annual State Department reports, Patterns of Global Terrorism, the CIA wrote a prescient study in 1976 that concluded that globalization was an irreversible trend likely to aggravate the problem of terrorism in the

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1. See 22 U.S.C.A. § 2656f (West 2006) (requiring the Secretary of State to provide annual country reports on terrorism).
coming years. Modern terrorism emerged from an eclectic mix of right-wing, state-sponsored and third world liberation fronts in the 1960s and 1970s; by the 1990s, it had developed into a method of irregular war waged by a global Islamic jihad. The attacks of September 11 signaled that terrorism had reached strategic maturity, a radical undermining of the Westphalian order, ushering in a potentially new epoch of warfare fought not by states, but within states. The concern in the Middle Ages was not with bellum, or the public use of force, but rather with duellum, the private use of force. Before the Westphalian era, states focused on regulating the private use of force, establishing sovereignty and the government’s monopoly on the use of force. The focus on limiting the initiation of war by one state against another state, or jus ad bellum, is a creature of the Westphalian paradigm. In the contemporary era, state monopoly on the exercise of catastrophic military power has been challenged. After 9/11 there is renewed interest in the state’s reassertion of its monopoly on military power and a focus on limiting the private use of force by individuals.

Al Qaeda has accelerated the trend by disassociating the conduct of warfare from securing political goals, making untenable any sort of negotiation or peace based on realist or idealist principles of statecraft, such as balance of power or compromise. For al Qaeda, strategy is sacrificed to the objective of annihilation. It is not hyperbole to suggest that 9/11 was a failure of strategic nuclear deterrence: if al Qaeda had had a nuclear weapon on that date, it would have used it.

As students of politics, we are conditioned to reject the possibility of the use of nuclear weapons to achieve political aims. The purpose of the jihad, however, is to terrorize the enemies of God, not to reach

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2. See CENT. INTELLIGENCE AGENCY, INTERNATIONAL AND TRANSNATIONAL TERRORISM: DIAGNOSIS AND PROGNOSIS 29–30 (Apr. 1976) (setting forth the following four trends of globalization that exacerbate terrorism: (1) clashes between conflicting ethnicities; (2) instability in urban settings; (3) increasing development of terrorist means and capacities; and, (4) increasing susceptibilities of societies).


4. See id. at 192 (warning that “as the second millennium A.D. is coming to an end, the state’s attempt to monopolize violence in its own hands is faltering . . . . The rise of low-intensity conflict may, unless it can be quickly contained, end up destroying the state.”).
a political objective.\textsuperscript{5} Just as the study of war has shifted from superpower competition to insurgent warfare and terrorism, our understanding of terrorism itself may be evolving. Some argue that, historically, terrorists sought to achieve an audience over which to exercise terrorist influence, but the new extreme terrorist appears to have only one audience in mind—a deity—and the goal is apocalyptic, not political.\textsuperscript{6} This focus is difficult for the modern, Western mind to grasp, since organized violence—war—is generally regarded as “the continuation of policy by other means.”\textsuperscript{7} Cultural norms surrounding violence can vary greatly, even within the same race and country—based merely on regional experiences—so it should not be surprising that a cultural chasm separates these terrorists from a conventional understanding of the purposes of war.

“Clausewitz,” the Prussian military strategist, “has been reversed by bin Laden. Violence is not an instrument of policy; violence is the purpose of politics. Bin Laden has done nothing less than create a new form of achievement, and therefore, a new kind of warfare.”\textsuperscript{9} Moreover, the nation-state is no longer considered the subject or primary actor of international politics, as is the case with traditional warfare.\textsuperscript{10} Instead, the goal is to foment an inter-civilization “blood feud” between the Islamic and Western worlds. Not reducible to political compromise that might terminate the conflict, “the [blood] feud knows no beginning and it has no end. It is a form of behaviour associated with a specific structural order, and it is as persistent as the structural order itself; in this sense it is eternal.”\textsuperscript{11} For those

\begin{itemize}
\item \textsuperscript{5} See Daniel Benjamin & Steven Simon, The Age of Sacred Terror 17 (2002) (paraphrasing sheik leader Omar Abdel Rahman’s comments that jihad is not a matter of prayer or discussion, but rather bullets and bombs).
\item \textsuperscript{6} See Martha Crenshaw, The Psychology of Terrorism: An Agenda for the 21st Century, 21 POL. PSYCHOL. 405, 411 (2000) (contrasting “new” terrorists from “old” as motivated by and answerable only to a god).
\item \textsuperscript{7} See Carl von Clausewitz, On War 87 (Michael Howard & Peter Paret eds. & trans., Princeton Univ. Press 1984) (1832).
\item \textsuperscript{8} See Dov Cohen & Joe Vandello, Meanings of Violence, 27 J. LEGAL STUD. 567, 573–74 (1998) (providing different understandings of violence between southern and northern culture in the United States as an example of varying interpretations of violence between cultures).
\item \textsuperscript{10} See id. at 2 (noting that violence typical comes from “non-state actors”).
\item \textsuperscript{11} Emrys L. Peters, The Bedouin of Cyrenaica: Studies in Personal
engaged in a blood feud, there is no “modern” world to seek or to build.\textsuperscript{12}

After the Twin Towers fell, the prolific writer and Canadian politician Michael Ignatieff concluded, “[e]vil has escaped the prison house of deterrence.”\textsuperscript{13} “The logic of deterrence that once kept state violence in some kind of check has no traction with loners and the cult leaders of global terrorism.”\textsuperscript{14} September 11 remains an inspiration, inviting ever more creative and spectacular methods of attack, much as the assassination of Tsar Alexander II inspired nihilists to launch an age of anti-bourgeois terrorism throughout Europe.\textsuperscript{15}

This vision—collapsing states and cadres of undeterrables equipped with weapons of mass destruction—might seem a lurid exaggeration, and if so dangerous . . . . It could be argued that the attack of September 11, terrible as it was, is unlikely to recur, since security has been tightened and Al Qaeda’s recent attacks have all been on secondary rather than primary targets. September 11 might turn out to represent the worst that will ever happen, rather than the first stage of an escalating series of apocalyptic spectaculars.\textsuperscript{16}

It is difficult to offer a prediction on which of Ignatieff’s futures will come to pass. One thing is certain, however. The specter of nuclear weapons being placed in the hands of terrorists could lead to repeated terrorist nuclear strikes, a haunting fulfillment of van Creveld’s prediction of the end of the nation-state.\textsuperscript{17} This possibility converts terrorism from a second or third order nuisance to a strategic, even existential, threat.\textsuperscript{18}

\begin{footnotesize}
\begin{enumerate}
\item \textsuperscript{12} See ROBERT D. KAPLAN, WARRIOR POLITICS: WHY LEADERSHIP DEMANDS A PAGAN ETHOS 3–4 (2002) (contrasting modern populist movements from those of the twentieth century).
\item \textsuperscript{13} MICHAEL IGNATIEFF, THE LESSER EVIL: POLITICAL ETHICS IN AN AGE OF TERROR 152 (2004).
\item \textsuperscript{14} Id. at 151.
\item \textsuperscript{15} See id. at 152.
\item \textsuperscript{16} Id. at 152.
\item \textsuperscript{17} See id. at 147–48 (describing the declining effect of the nation-state’s role in war as terrorist networks are able to afford and access materials to produce nuclear weapons).
\item \textsuperscript{18} See BENJAMIN & SIMON, supra note 5, at 220, 229 (analyzing the increased
\end{enumerate}
\end{footnotesize}
Unfortunately, atomic bomb design and manufacture is not extremely difficult; the primary hurdle for developing a bomb is obtaining sufficient fissile material. Construction of a nuclear bomb is a relatively simple affair, and it is possible to do so in a very short amount of time. Three decades ago, the Office of Technology Assessment (OTA) concluded:

[A] small group of people, none of whom have ever had access to the classified literature, could possibly design and build a crude nuclear explosive device. They would not necessarily require a great deal of technological equipment or have to undertake any experiments. Only modest machine-shop facilities that could be contracted for without arousing suspicion would be required. The financial resources for acquisition of necessary equipment on open markets need not exceed a fraction of a million dollars.

At the time of the dire assessment, the likelihood of nuclear terrorism was deemed to be fairly low. Thirty years after the study, there is ample reason for greater worry as well as some room for a degree of comfort. Today, the number of jihadists is growing in both number and geographic dispersion, and they continue to seek a nuclear capability to use against “soft” targets in the West, such as cities. To fund these extremists, an infusion of wealth from Saudi
Arabia, Iran, and other countries, is flowing into terrorist groups. Anti-U.S. and anti-globalization sentiment is increasing, and the radicalization process is occurring more anonymously through the use of the Internet, raising the prospect of attacks by unknown and isolated groups. Indications that Islamic terrorists seek to acquire and use nuclear weapons are at least unsettling; as those reports increase in veracity, the prospect becomes terrifying. Osama bin Laden, for example, has already stated an interest in acquiring nuclear weapons. Another al Qaeda spokesman, Sulaiman Abu Ghaith, suggested the group has a right to kill up to four million Americans in retaliation for deaths it claims Israel inflicted on Muslims. Besides al Qaeda, other Islamic extremists have expressed an interest in acquiring nuclear weapons. In 2002, Chechen rebels threatened a nuclear strike against Moscow in revenge for Russia’s scorched earth operations in Chechnya. The commitment to acquire nuclear weapons reflects what a RAND


25. See National Intelligence Estimate, supra note 23.


27. See Suleiman Abu Gheith, Why We Fight America, reprinted in Middle East Media Research Inst., 'Why We Fight America': Al-Qa’ida Spokesman Explains September 11 and Declares Intentions to Kill 4 Million Americans with Weapons of Mass Destruction, Special Dispatch Series No. 388 (June 12, 2002) http://memri.org/bin/opener.cgi?Page=archives&ID=SP38802 (presenting al Qaeda’s ideological, historical, and religious grounds for seeking retaliation against the United States).

28. See Peter Baker, Russians Announce Chechnya Crackdown—Rebels Shoot Down Helicopter, Killing 9, WASH. POST, Nov. 4, 2002, at A12 (citing a Chechen website calling for stronger rebel tactics that would result in the use of nuclear weapons).
Corporation study called the "inexorable escalation" of terrorist goals over the last decade.29

On the other hand, however, we have taken effective steps to reduce our vulnerabilities, particularly after September 11. Since that day, for example, the United States has captured or killed a majority of al Qaeda leaders, reformed the national intelligence apparatus, established a weapons of mass destruction ("WMD") division in the FBI and removed significant policy and bureaucratic barriers to information-sharing throughout the U.S. government.30 In international diplomacy, the United States and other countries have worked to develop and strengthen a host of multilateral arrangements, including the Proliferation Security Initiative, U.N. Security Council Resolution 1540, the Global Threat Reduction Initiative, the International Convention for the Suppression of Acts of Nuclear Terrorism, amending the U.N. Convention on the Physical Protection of Nuclear Material, the International Atomic Energy Agency ("IAEA") Nuclear Safety Program and the IAEA Committee on Safeguards and Verification, and most recently, the Global Initiative to Combat Nuclear Terrorism.31 These programs and others are designed to provide a multi-layered "defense in depth" against nuclear terrorism.32

29. See Brian Michael Jenkins, Countering Al Qaeda: An Appreciation of the Situation and Suggestions for Strategy 14 (2002) (describing the potential of terrorist groups to graduate to more sophisticated weapons such as weapons of mass destruction).


32. See id. at 7 (defining "defense-in-depth" as the combination of political will and actual capacity to reduce the threat of nuclear terrorism, which includes the Department of Energy’s Second Line of Defense Program and the Global Threat Reduction Initiatives); see also Press Release, White House, Fact Sheet: The Global Initiative to Combat Nuclear Terrorism (July 15, 2006), available at http://www.whitehouse.gov/news/releases/2006/07/20060715-3.html (listing cooperative efforts such as plans to improve physical control, security, and accountability of nuclear weapons; detection and suppression of illicit trafficking of materials; mitigating consequences of acts of nuclear terrorism; cooperating in
The most worrisome nuclear threat is the specter of a blind side terrorist attack—an attack against a major city that cannot be attributed to any state or terrorist group. No nation or group would accept responsibility, leaving few ready options for response. This scenario is in many ways worse than the “bolt out of the blue” first strike scenarios that worried strategic thinkers during the Cold War. In the case of a Soviet attack, the Soviet Union was subject to immediate retaliation, and therefore, deterrence. In the case of a blind side terrorist attack, there is no ready attribution, thus deterrence is weaker.

II. STRATEGY FOR COUNTERING TERRORISM

The United States has responded to the threat of attack by weapons of mass destruction with three mutually supporting pillars—counterproliferation, nonproliferation, and consequence management. Nonproliferation seeks to prevent states and non-

the development of technical means to combat nuclear terrorism; ensuring that states take all possible measures to deny a safe-haven to terrorists; and strengthening the U.S. legal framework).


35. See id. at xvi–xvii; cf. Nikolai Sokov, Monterrey Inst. of Int’l Studies, The Agenda for Arms Control Negotiations After the Moscow Treaty, 1–2 (PONARS Policy Memo No. 278) (Oct. 2002), available at http://www.csis.org/media/csis/pubs/pm_0278.pdf (underscoring the notion that a country need not possess the capability of completely destroying an opposing party’s weapons arsenal for deterrence to work, as the effectiveness of deterrence turns on the perceptions of the parties involved).

36. See THE WHITE HOUSE, NATIONAL STRATEGY TO COMBAT WEAPONS OF MASS DESTRUCTION 2 (Dec. 2002) [hereinafter NATIONAL STRATEGY DEC. 2002] (noting that pursuit of intelligence collection and analysis, delivery systems, research and development, bilateral and multilateral cooperation, and targeted strategies against hostile states and territories, streamline the three pillars of the U.S. national security strategy).
state actors from acquiring weapons of mass destruction.\textsuperscript{37} Diplomacy, multilateral agreements, arms control, threat reduction assistance, and export controls are all elements of nonproliferation, and each is designed to dissuade or impede the spread of WMD.\textsuperscript{38} Consequence management includes preparations to respond more effectively to the use of WMD in order to reduce and ameliorate the effects of an attack.\textsuperscript{39} These efforts enhance deterrence by denying an adversary the objectives of the attack—to terrorize a civilian population and economy, to sow doubt, cause confusion and loss of national resolve, and to destroy a way of life.

Counterproliferation is comprised of active defenses to disable, interdict or disrupt, or destroy WMD, as well as a strong declaratory policy and capability to deter attack.\textsuperscript{40} Effective deterrence is grounded in forming the subjective belief in the mind of the adversary that we have the capability to inflict harm and possess the willpower to exercise that capability. Evident capability means possessing a nuclear or conventional force structure that is able to act to prevent a nuclear attack, or to respond effectively if an attack is not avoided. Whatever their composition, forces must exercise sufficient power to impose an unacceptable cost on an opponent who is considering a WMD attack. During the Cold War, this capability generally meant existence of a second-strike capability. Willpower means that an adversary must be convinced that we actually would use the forces at hand, whether nuclear or conventional, in response to an attack.

Each pillar of the National Strategy is essential in dealing with terrorism, but if we focus more closely on the deterrence aspect of

\begin{itemize}
\item \textsuperscript{37} Id. at 2, 3–5.
\item \textsuperscript{38} Id. at 3–5.
\item \textsuperscript{39} See id. at 5 (elaborating that the strategy of consequence management applies to both internal attacks and to the use of WMD against forces deployed abroad).
\item \textsuperscript{40} See id. at 2–3 (characterizing counterproliferation as an operational strategy that seeks to offset the threat of possession and increased use of WMD by hostile states and terrorists who threaten U.S. national security). Counterproliferation involves an active strategy of bolstering intelligence and law enforcement capabilities to detect and prevent the delivery of WMD to hostile states and terrorists, reinforcing the U.S. government's willingness to use blunt military force to deter WMD use, and enhancing the ability of U.S. military forces and appropriate civilian agencies to destroy WMD systems before they can be deployed. Id.
\end{itemize}
counterproliferation, some complications become more apparent. The Cold War deterrence model, resting on a "balance of terror" with complementary superpower capability, may have less relevance in the age of terrorism.

Counterproliferation strategies often carry additional risk because of the possibility of error, political effect, miscalculation, or unintended consequences inherent in the threat or use of force. The United States and other countries appear to have sampled the range of counterproliferation strategies in an effort to deter WMD terrorism. These efforts have included strategies of coercive diplomacy and the use of force, as well as proclaiming the right to employ preemptive force in some cases. The National Security Strategy of 2002, for example, declared,

For centuries, international law recognized that nations need not suffer an attack before they can lawfully take action to defend themselves against forces that present an imminent danger of attack. Legal scholars and international jurists often conditioned the legitimacy of preemption on the existence of an imminent threat—most often a visible mobilization of armies, navies, and air forces preparing to attack.

We must adapt the concept of imminent threat to the capabilities and objectives of today's adversaries. Rogue states and terrorists do not seek to attack us using conventional means. They know such attacks would fail. Instead, they rely on acts of terror, and potentially, the use of weapons of mass destruction—weapons that can be easily concealed, delivered covertly, and used without warning. 41

Four years later, the National Security Strategy was reissued, reaffirming the approach and providing additional context of the doctrine as a realistic component of self-defense, stating,

If necessary . . . under long-standing principles of self-defense, we do not rule out the use of force before attacks occur . . . . When the consequences of an attack with WMD are potentially so devastating, we cannot afford to stand idly

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41. See THE WHITE HOUSE, NATIONAL SECURITY STRATEGY OF THE UNITED STATES OF AMERICA 15 (June 2002) [hereinafter NATIONAL SECURITY STRATEGY JUNE 2002].
by as grave dangers materialize. This is the principle and logic of preemption.42

The special problems associated with some counterproliferation approaches are that they may fail to identify and apply pressure to the locus of incentive that motivates terrorist attacks, so they may not be an effective deterrent. If a commercial ship carrying WMD is interdicted on the high seas, for example, it is possible—even likely—that the flag state under which the vessel is registered, or the commercial shipping company that owns the vessel, not is knowledgeable of the WMD on board the vessel. The flag state and the shipper likely are victims, so taking action only against the vessel might have little utility in deterring a state or non-state group that is illicitly smuggling the cargo.

Moreover, the very nature of the apocalyptic terrorist threat means that traditional military action may achieve a tactically successful interdiction, but it in no way diminishes the threat or the likelihood of continuing attempts to smuggle and employ WMD.

The reason is that military action or the threat of conventional military force cannot win the intensely ideological struggle of religiously-inspired terrorism. “Within the logic of global jihad, every action that tends to threaten the ummah strengthens the logic and increases the allure of terrorism.”43 Operational successes by the United States sow the seeds of escalating resistance. “Specifically, the more successful the United States is perceived to be, the more fighting the United States seems to constitute a sufficient politics.”44

Because of the pronouncements in the National Security Strategy and the war in Iraq that led to the toppling of Saddam Hussein, some scholars suggest we are entering a new age of preventive war, an era in which there is growing acceptance of preventive uses of force.45 I

42. See THE WHITE HOUSE, NATIONAL SECURITY STRATEGY OF THE UNITED STATES OF AMERICA 23 (Mar. 2006) [hereinafter NATIONAL SECURITY STRATEGY MAR. 2006].
43. See Westbrook, supra note 9, at 15.
44. Id.
doubt that assessment. Preemption comes with a high political cost, and preventive action may not purchase the intended security. Consider Iran, for example. Fareed Zakaria comments that a preemptive strike against Tehran's nuclear facilities likely would do limited physical damage while serving as a rallying point for the Iranian population in support of the mullahs. Similarly, former national security advisor Zbigniew Brzezinski offers an even more dire assessment that "an attack on Iran would be an act of political folly, setting in motion a progressive upheaval in world affairs. With America increasingly the object of widespread hostility, the era of American preponderance could come to a premature end."

The war in Iraq has displayed its own set of challenges, making it more difficult to evaluate the efficacy of preemption. With Iraq, it is open to determination whether the war generated deterrent effects against potential rogue states, such as Libya, helping to bring them into the world community, or whether the arrow points the other way, with the cost of the war so high that it is the United States that is deterred from new intervention. The benefits of liberating Iraq from a brutal dictator and redrawing the political calculus in the Middle East in favor of democracy are balanced by the difficulties in suppressing an intransigent insurgency. On the other hand, the logic of preventive action might be clearer when it is more successful and the costs of inaction greater. The Israeli attack against Baghdad's Osirak reactor complex in 1981, for example, probably prevented Saddam Hussein from constructing a nuclear device before the first Gulf War.

46. See Fareed Zakaria, Tag-Teaming the Mullahs, NEWSWEEK, Dec. 6, 2004, at 37 (contending that U.S. preventative measures cannot succeed in Iran, and that Europe must employ coercion or engagement tactics to prevent Iran from going nuclear).

47. Zbigniew Brzezinski, Op-Ed., Been There, Done That, L.A. TIMES, Apr. 23, 2006, at 2, (alluding to the fact that while the United States remains the clear world superpower, "it has neither the power nor domestic inclination to impose and then to sustain its will in the face of protracted and costly resistance").

48. See generally THOMAS E. RICKS, Fiasco: The American Military Adventure in Iraq 321-362 (2006) (chronicling difficulties faced by the United States in Iraq in pacification and reconstruction, including outside insurgents entering the fight, difficulty in obtaining the support of the local population in some regions, difficulty in training the Iraqi army, maintaining a united coalition, and increasingly creative and effective insurgent tactics).

III. ANOTHER LOOK AT DETERRENCE

Given the complexities inherent in conventional counterproliferation strategies, there is some value in rethinking models of deterrence in the world after 9/11. New threats require new methods of deterrence. The traditional theory of deterrence, and its application, has atrophied since the demise of the Soviet nuclear threat.

The idea that deterrence is dead has moved beyond the academy to become fairly accepted political orthodoxy. At the same time, international law scholars generally have walked away from the idea of deterrence, which is predicated on the threat of retaliation, as prohibited by Article 2, Paragraphs 3 and 4, of the U.N. Charter. These views are important because they drive not only how we look at deterrence (and what we signal to our adversaries), but also how we address other issues such as preemptive war and missile defense.

One important caveat is that motivation of retaliation must be calibrated based on deterrence of future acts rather than punishment for previous acts. If deterrence does not work or cannot work, then we are more likely to find preemptive war and missile defense attractive responses to catastrophic terrorist attack.

Conventional wisdom suggests traditional concepts of deterrence were shattered as a consequence of 9/11. Speaking at the Military Academy at West Point commencement in 2002, President Bush said,

that Israel’s destruction of the Osirak reactor likely assisted in the expulsion of Iraq from Kuwait by the United States in 1991).

50. See NATIONAL SECURITY STRATEGY Mar. 2006, supra note 42, at 1, 3–38 (responding to new threats to national security by “leading an international effort to end tyranny and to promote effective democracy”).

51. See Keith B. Payne & C. Dale Walton, Deterrence in the Post-Cold War World, in STRATEGY IN THE CONTEMPORARY WORLD 161, 179 (John Baylis et al. eds., 2002) (“For the United States and its allies, nuclear deterrence may soon prove difficult or impossible to maintain.”).

52. U.N. Charter art. 2, paras. 3–4; see Derek Bowett, Reprisals Involving Recourse to Armed Force, 66 AM. J. INT’L L. 1, 1–2 (1972) (contending that while the words “reprisals” and “retaliation” do not appear in the Charter, the drafters sought to prohibit the use of force as a means of punishment and limit force to permissible self-defense).
For much of the last century, America’s defenses relied on the cold war doctrines of deterrence and containment. In some cases, those strategies still apply, but new threats also require new thinking. Deterrence—the promise of massive retaliation against nations—means nothing against shadowy terrorist networks with no nation or citizens to defend.\footnote{See Commencement Address at the United States Military Academy in West Point, New York, 38 WEEKLY COMP. PRES. DOC. 944, 946 (June 1, 2002).}

President Bush returned to West Point in 2006, declaring,

> The enemies we face today are different in many ways from the enemy we faced in the cold war. In the cold war, we deterred Soviet aggression through a policy of mutually assured destruction. Unlike the Soviet Union, the terrorist enemies we face today hide in caves and shadows and emerge to attack free nations from within. The terrorists have no borders to protect or capital to defend. They cannot be deterred—but they will be defeated.\footnote{See Commencement Address at the United States Military Academy in West Point, New York, 42 WEEKLY COMP. PRES. DOC. 1037, 1039 (May 27, 2006).}

Negative incentives are constructed by rebuilding strategic deterrence in a way that exploits the adversary’s fear, doubt or indecision and holds at risk those things held most dear.\footnote{See NATIONAL SECURITY STRATEGY JUNE 2002, supra note 41, at 14 (suggesting that limiting the potential damage from a WMD would deter their use by persuading potential terrorists that their desired ends are unattainable).} In fact, despite their ethereal motivations, evidence suggests that terrorist groups and their rogue state sponsors can be deterred; deterrence against such foes may be more robust than is often believed. After Israel unleashed a pulverizing attack against Lebanon in response to Hezbollah kidnapping and murdering Israeli soldiers, Sheik Hassan Nasrallah, the leader of Hezbollah, said in an interview,

> We did not think, even one percent, that the capture would lead to a war at this time and of this magnitude. You ask me, if I had known on July 11 . . . that the operation would lead to such a war, would I do it? I say no, absolutely not, for humanitarian, moral, social, security, military and political
reasons. Neither I, Hezbollah, prisoners in Israeli jails, nor the families of the prisoners would accept it.56

If Nasrallah is to be believed, the entire war in Lebanon could have been averted through more effective deterrence signaling, saving thousands of lives. Such deterrent signals are developed against the backdrop of experience and history, with each side conditioning the other and each side creating the context in which deterrence is exercised. In the case of Iraq, in advance of the coalition invasion, the White House warned Saddam Hussein that his country would face “annihilation” if he responded by launching weapons of mass destruction.57

Conventional deterrence still has utility as well. The Government of Pakistan was apparently deterred from resisting the U.S. effort to remove the Taliban from power in Afghanistan and carry the war across the border into Pakistan to seek Taliban and al Qaeda forces. Pakistani President Musharraf recalls that Deputy Secretary of State Armitage warned that the United States would bomb Pakistan “back into the Stone Age,” if Musharraf did not cooperate.58 “This was a shockingly barefaced threat,” Musharraf recalls, “but it was obvious the United States had decided to hit back, and hit back hard . . . I war-gamed the United States as an adversary . . . [I]f we do not join them, can we confront them and withstand the onslaught? The answer was no, we could not . . . .59

Deterrence has long been a staple in the study of state-centered warfare. By “influencing the behavior of potential wrongdoers

56. See Matthew Schofield & Leila Fadel, Nasrallah Comes Close to Admitting That Kidnappings were a Mistake, MERCURY NEWS, Aug. 27, 2006, at A13; see also Rory McCarthy, Hizbullah Leader: We Regret the Two Kidnappings That Led to War with Israel, GUARDIAN, Aug. 28, 2006, at 1; Yaakov Katz, Security and Defense: Marching Backward?, JERUSALEM POST, Aug. 3, 2006, at 1–3.

57. See Joyce Howard Price, U.S. Reprisal to be ‘Annihilation’, WASH. TIMES, Sept. 9, 2002, at 1 (justifying the policy of deterrence as necessary to prevent the U.S. from becoming a target).

58. Cf. Interview by Melissa Block with Richard Armitage, Deputy Sec. of State 2001, Armitage Denies Making ‘Stone Age’ Threat (Sept. 22, 2006), available at http://www.npr.org/templates/story/story.php?storyId=6126088 (relaying that Armitage denies threatening Pakistan with military force, but noting that Armitage did inform Pakistani intelligence officials that they had to decide if they were “with us or against us”).

through the prospect of punishment," deterrent avoids some, but not all, of the pitfalls and backlash inherent in policies based on conventional threats, bullying, intimidation and preemptive attack. Those more aggressive approaches often play into the hands of authoritarian leaders who “know that if they provoke the United States, Washington will isolate their countries and thus strengthen their authority.”

Historically, deterrence theory has focused on two areas of analysis—strategic nuclear deterrence and case studies of conventional or regional deterrence, such as the Korean War and the Falklands War. During the Cold War, the United States adhered to a doctrine of nuclear deterrence as the cornerstone of strategic stability. The present age of terrorism, however, has placed deterrence in a less certain position. Although promising Armageddon and actually greater destruction than other counterproliferation approaches, deterrence may be less threatening to many countries because the chance of attack is more remote and they can exercise a greater degree of control over the process.

60. See Lawrence Freedman, Deterrence 8 (2004) (tracing the development and use of the concept of deterrence as a behavioral influence).
61. See, e.g., Fareed Zakaria, What Iranians Least Expect; What if Bush Publicly Offered to Open an Embassy in Tehran?, NEWSWEEK, Oct. 2, 2006, at 35 (suggesting that Iranian President Mahmoud Ahmadinejad is winning the public diplomacy race, as the United States has tended to use hard tactics such as threats and intimidation).
62. Ian Bremmer, The World is J-Curved, WASH. POST, Oct. 1, 2006, at B3 (suggesting that the United States respond to such provocation by encouraging free trade and open communication within and without authoritarian states, which will eventually undermine their authoritarian governments).
Deterrence is a subjective concept, exposing to risk something that the other side values. For example, in 2001 Deputy Israeli Police Minister Gideon Esra suggested that Israel might bury Palestinian suicide bombers with pig skin or pig blood.\(^6\) Strict Muslim tradition holds that if a Muslim is contaminated by a pig before death, he would be denied martyr status and entry into heaven. In February, 2004, Rabbi Eliezer Moshe Fisher of the Jerusalem Rabbinical Court ruled, “there is no Halachic ban on using bags of lard in buses and other places,” including schools, shopping malls and restaurants, to save lives by deterring Muslim terrorist bombers.\(^7\) Similarly, Russian forces in Chechnya reportedly buried Islamic terrorists in pig skin as a deterrent to others.\(^8\) During the Spanish-American War, some suggest General John Pershing executed Islamic insurgents with bullets dipped in pig fat, and then wrapped their bodies in pigskin before burial.\(^9\)

The United States policy for combating weapons of mass destruction warns, “[t]he United States will continue to make clear that it reserves the right to respond with overwhelming force—including through resort to all our options—to the use of WMD against the United States, our forces abroad, and friends and allies.”\(^70\) Beyond that, however, there is nothing publicly available regarding when an attack crosses the threshold that warrants employment of “all options.”

One perspective is that deterrence is strengthened through ambiguity—if adversaries are uncertain as to what might incite punishing retaliatory response, they will tend to avoid approaching the edge of risky behavior.\(^71\) It seems equally plausible, however, that

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69. Steven Menashi, Teaching Evil, POLICY REVIEW, Apr.–May 2002, at 90, 90 (reviewing KAPLAN, supra note 12, and describing General Pershing’s tactics, which effectively deterred guerrilla violence by Muslim terrorists in the Philippines).
70. NATIONAL STRATEGY DEC. 2002, supra note 36 at 3.
71. See, e.g., GEORGE & SMOKE, supra note 65, at 562–63 (discussing then
reluctance to delineate at least some sort of framework for retaliation could be interpreted as a sign of indecision, a lack of resolve and unity, and even weakness. Delineating particular circumstances that would elicit retaliatory response, however, permits terrorists to "play chicken," testing the resolve of the United States and potentially goading the country into a response. A middle course may be to discuss openly theoretical models of deterrence in the post-9/11 world—giving some indication of the thought process surrounding nuclear retaliation, but avoiding red-line statements that would commit policymakers in advance.

IV. ATTRIBUTION

In addition to capability and will, the new strategic deterrence against catastrophic terrorist attack requires introduction of a third component: attribution. During the bipolar era, attribution of a nuclear strike was quite easy, as only the Soviet Union (and later China) was capable of launching a devastating nuclear attack. The diffuse nature of the contemporary threat of nuclear terrorist attack makes attribution of a nuclear terrorist attack potentially incredibly difficult, and yet the National Security Strategy indicates effective deterrence requires rapid attribution.\(^7\) The analysis that follows seeks to broaden our understanding of how attribution may be achieved, as well as how deterrence might be approached in the absence of positive attribution.

It may be possible to deter non-state actors; deterring their rogue state sponsors is a much more certain prospect, since they have the accoutrements of statehood that can be placed at risk—government, population, economy, territory, military forces, to name just a few. Attributing a terrorist attack to a state-sponsor shifts the analysis away from the non-state actor and toward a nation-state. This converts an attack by a non-state insurgency into an interstate conflict—recovering the rules and stability of expectations that are the hallmark of the Westphalian system and a cornerstone of deterrence.

\(^7\) Secretary of State John Foster Dulles’ mid-1950s deterrence policy, which was intentionally vague for strategic purposes).

72. NATIONAL STRATEGY DEC. 2002, supra note 36, at 3.
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Terrorists have only their lives to lose, and they likely do not hold them dear, so merely putting their lives at risk, or threatening to bring them to trial, often is no deterrence at all. The problem of state-sponsored terrorism is linked to the problem of warfare generally, since state-sponsored terrorism is a form of secret war, sponsored, funded, and abetted by states. In order to deter the state sponsor, we have to design an incentive system that internalizes the costs of proliferation to the regime providing nuclear material to terrorists.

Strategic nuclear deterrence may be able to accomplish this shift in costs, but requires us to overcome what is referred to in torts as the *enigma of cause*—how can we demonstrate a connection between the nuclear attack and the state sponsoring the attack? If the costs of responding are sufficiently high, we can deter state action if we can positively attribute the acts of terrorists to specific states. During the Cold War, attribution was easy since attack by intercontinental ballistic missiles ("ICBMs") or long-range bomber aircraft could be detected in advance and positively attributed to the attacking state. Even if a retaliatory response could not be launched before a successful attack, a second strike capability was ensured through dispersion of nuclear force assets throughout a triad consisting of manned bombers, ballistic missile submarines, and ICBMs.\(^{73}\)

Defining the parameters of state responsibility in the post-9/11 world "is the last significant area of the great effort to codify international law."\(^{74}\) Historically, states have avoided liability for hostile acts committed against another state by associated private persons or non-state actors who were not acting as agents of the state.\(^{75}\) In 2001, the International Law Commission ("ILC") adopted


The ILC efforts to achieve authoritative codification reached maturation just as the number of states, new and more influential international organizations, regional groupings, and nongovernmental organizations is expanding. In accommodating the transformed nature of world politics, the articles attribute to a state conduct committed by private persons or non-state actors who are “empowered by the law of that State to exercise elements of the governmental authority . . . provided the person or entity is acting in that capacity in the particular instance.” The difficulty, of course, is to determine when a terrorist—a leader like Nasarallah in Lebanon—is actually working on behalf of a foreign government—such as the government of Iran.

Once attribution is established—a connection between the terrorist activity and a state—holding the state responsible or liable is fundamental to rebuilding deterrence. Positive attribution conclusively links terrorist activity to a state sponsor, and thereby is the shortest route toward opening the possibility of effective response. Positive attribution strengthens deterrence, but the nature of terrorist attack is such that the origin and sponsors of the attack may be difficult or impossible to ascertain. Fresh approaches are needed to overcome the difficulties inherent in attribution of terrorist attack and science can help to regain some ability to attribute an attack positively.

Fallout forensics and nuclear materials tagging are perhaps the most promising methods that might be used to attribute a WMD terrorist attack positively, thereby offering the best opportunity to

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77. Caron, supra note 74, at 859 (expressing the likelihood that the “increasing complexity in international actors” will influence state responsibility more than the ILC’s codification efforts).

78. ILC State Responsibility, supra note 76, art. 5.

79. For a discussion on Osama bin Laden’s status as the agent of a state, see John Quigley, International Law Violations by the United States in the Middle East as a Factor Behind Anti-American Terrorism, 63 U. PITT. L. REV. 815, 826 (2002) (explaining that the United States has “assert[ed] the identity of bin Laden’s group and the Taliban government of Afghanistan”).
link the attack to a state sponsor. Tagging nuclear material throughout the regular fuel cycle process also would make it easier for states and the IAEA to determine the origin of material later diverted to create a nuclear weapon, making post-attack forensics that much easier.

Fallout analysis, an obscure branch of nuclear forensic science, is poised to permit researchers to attribute a nuclear detonation to a specific country, and perhaps a specific reactor. If future research confirms the feasibility of such attribution, it will dramatically strengthen strategic nuclear deterrence against nuclear terrorist attack. The goal of fallout analysis is to discover quickly the source of nuclear material that went into construction of a particular bomb.

The United States restarted the Cold War-era fallout analysis program in 1999 in order to help to rebuild deterrence against nuclear terrorism. If terrorists, as well as their state sponsors, know that a bomb can be traced back to them, they are less likely to use one, even if they posses it. Although this assumption may be questioned, accurately identifying the source reactor of the highly enriched uranium certainly complicates proliferation and planning for states of proliferation concern, as well as attack planning for non-state groups inclined to employ a nuclear weapon. Much of the radiochemistry work from the Cold War has had to be resurrected; retired scientists were recalled and decades of old analysis was dusted off. The program now involves manned aircraft and ground


81. Id.

82. Fissile material, such as plutonium and uranium “come in various isotopes, and a given sample of either metal will combine several of those isotopes in hard-to-alter combinations. To some degree, one can infer those characteristics from the design details of the enemy’s production facilities and from the operating histories of its plants.” Id.


84. Id. (outlining the revival of the program when in 1999, Dr. Jay C. Jarvis, a nuclear scientist and “then head of the Defense Threat Reduction Agency at the Pentagon, began an effort to address the identification problem by financing research at the nation’s weapons laboratories”).
robots that can enter nuclear fallout environments in order to take critical measures of radiochemistry signatures and profiles.\textsuperscript{85}

Nuclear tagging is a related method that also could strengthen deterrence. Tags are unique physical parameters associated with fissile material. "Each fissionable piece yields a unique post-explosion signature."\textsuperscript{86} This is "analogous to stamping each manufactured bullet with an indelible serial number and maintaining ammunition registration documents."\textsuperscript{87} If the nuclear material were used in a nuclear terrorist attack, the reactor or laboratory of origin could be determined, exposing the mediating state to responsibility.

Fallout analysis builds deterrence and tagging does so even more. The prospect of being wrongly held accountable for providing material to nuclear terrorists provides incentive for peaceful countries to participate in a comprehensive tagging program. As more countries tag their materials, the potential pool of untagged highly enriched uranium will shrink, dramatically increasing the effectiveness of post-attack forensics.

Expanding the network of cooperation among states, scientists and laboratories enhances deterrence. Tagging and fallout forensics are mutually supportive and cooperation in tagging could lead to more assertive efforts to gain cooperation from nuclear states in tagging and registering their fissile material.\textsuperscript{88} Establishing doctrine in the absence of (or complementary to) effective forensic and tagging programs, however, is necessary in order to maintain a complete deterrent umbrella.

V. LEVERAGING MODELS FROM TORTS

So far the effort against international terrorism has drawn from two overlapping and complementary conceptual legal models: criminal law and international law, the latter represented by the law of armed conflict or international humanitarian law. Much of the debate over the rights of detained terrorist suspects, for example, has

\textsuperscript{85} COMM. ON SCI. AND TECH. FOR COUNTERING TERRORISM, NAT’L RESEARCH COUNCIL, MAKING THE NATION SAFER: THE ROLE OF SCIENCE AND TECHNOLOGY IN COUNTERING TERRORISM 325 (2002).
\textsuperscript{86} Corr, supra note 33, at 2.
\textsuperscript{87} Id.
\textsuperscript{88} Id. at 7–8.
turned on which model should be applied. Both of the two bodies of law are essential to combating terrorism, and efforts to suggest that one particular model is inherently better creates a false choice. But there is a third area of law—the civil law of torts—almost entirely absent from the conversation.

Concepts in civil law may be particularly useful in designing effective responses to terrorism, including further development of civil litigation against terrorism. The application of tort theory to strategic nuclear doctrine offers value in rebuilding deterrence against catastrophic nuclear terrorism.

If the United States were to be suddenly struck by a nuclear weapon, Iran would be an immediate suspect. As we further shape the doctrine of deterrence in the face of catastrophic terrorist nuclear attack, there is value in importing concepts in tort, such as negligence and strict liability, agency and respondeat superior, into the equation.

We can infer attribution of an attack to a particular suspect terrorist sponsor, but to do so we need a basis for policy—an intellectual model that would support the inference. Tort theory might be useful in filling this void since it is based on deterring conduct by shifting or imposing liability for harm. It may provide a guide for attribution during circumstances that are ambiguous,

89. In 1996, for example, Congress added a provision to the Antiterrorism and Effective Death Penalty Act that created a new exception to immunity in the Foreign Sovereign Immunities Act ("FSIA") for "state sponsors of terrorism." Foreign Sovereign Immunities Act, 28 U.S.C.A. § 1605(a)(7) (West 2006). Designation of state sponsors of terrorism is made annually by the Department of State. After removing state immunity, Congress created the "Flatow Amendment," a statutory cause of action for suits against agents of state sponsors of terrorism, which is codified as a note to § 1605 of the FSIA. Although the FSIA permits punitive awards against state agents and instrumentalities, it generally precludes awards against the state. This historical state privilege, however, is under assault. See, e.g., Stefan Kirchner, Third Party Liability for Hezbollah Attacks against Israel, 7 GERMAN LAW J. 777, 780-84 (2006) (describing Lebanese, Iranian and Syrian state responsibility for Hezbollah attacks against Israel); Vincent-Joel Proulx, Babysitting Terrorists: Should States Be Strictly Liable for Failing to Prevent Transborder Attacks?, 23 BERKELEY J. INT'L L. 615, 667 (2005) (arguing that the strict liability model of state responsibility promotes "international peace and security").

90. See Brzezinski, supra note 47 (asserting that "nuclear forensics would make it difficult to disguise the point of origin").
complicating an adversary’s calculation and thereby strengthening deterrence.

Generally, negligence is focused on conduct that is “unreasonably risky.”91 Much of tort law is devoted to deciding what constitutes unreasonable risk.92 A negligence case requires that the defendant owed the plaintiff a duty of care, such as not engaging in unreasonably risky conduct.93 In international relations, there are several sources of international law to protect countries from the specter of nuclear terrorism, and that law imposes a duty of care on all states. Foremost, Article 2(4) of the U.N. Charter requires member states to refrain from “the threat or use of force against the territorial integrity or political independence” of another member state.94 More specifically, U.N. Security Council Resolution 1540 contains enumerated and binding requirements for states to “refrain from providing any form of support to non-State actors” to develop, acquire, or use nuclear weapons.95 States are also compelled to adopt “appropriate effective” national laws which prohibit non-state actors from engaging in nuclear weapons development or employment.96

Negligence generally requires breach of an existing duty through unreasonably risky conduct.97 In the case of deterrence, negligence relates to conduct of the regime and the state and not the government’s state of mind. “[C]onduct is everything.”98 The conduct must have in fact caused harm to the plaintiff; in deterrence, the state sponsor or the terrorist group must have successfully executed a catastrophic attack. Moreover, the conduct of the terrorist organization, or the state sponsor, must have been a proximate cause

92. Id.; see RESTATEMENT (SECOND) OF TORTS § 291 (1965) (providing that an act is unreasonably risky if a reasonable person would have identified the risk of harm, and the risk was “of such magnitude as to outweigh” the act’s utility).
93. DOBBS, supra note 91, § 114.
94. U.N. Charter art. 2, para. 4.
96. Id. ¶ 2.
97. RESTATEMENT (THIRD) OF TORTS § 7 (2005) (providing that, under the negligence doctrine, actors have a duty to use reasonable care when their actions could create a risk of physical injury).
98. DOBBS, supra note 91, § 116.
of the harm, meaning that the conduct has a significant relationship to the harm.\textsuperscript{99}

In terms of state sponsorship of catastrophic terrorism, the proximate cause analysis could be the most difficult to work through—requiring a line to be drawn between harm that is a foreseeable result of terrorist sponsorship and harm that is fortuitous or the cause of the harm is trivial. In cases of trivial harm, for example, the harm is more significantly related to other causes.\textsuperscript{100} Suppose intelligence suggests State A has supplied a terrorist group with weapons and equipment to steal a nuclear weapon from State B; in response, State B dramatically increases the security of its nuclear weapons stockpiles by moving some weapons to a more secure location. In transit, a weapon is accidentally detonated in State B. Although State A's conduct was a cause in fact of the nuclear detonation suffered by State B, State A's conduct was not a proximate cause of the devastation.

Conventional negligence is rooted in economic analysis\textsuperscript{101} and involves breach of some level of reasonable standard of care to avoid expected loss or harm.\textsuperscript{102} Perhaps most obviously, nuclear deterrence could resort to a negligence-based framework in which attribution of a nuclear terrorist attack rests on those nations that have been demonstrably negligent in securing nuclear material. The incentive, of course, is to compel states to secure their material, but what do

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\textsuperscript{99} See id. \S 115; see, e.g., Debra M. Strauss, \textit{Enlisting the U.S. Courts in a New Front: Dismantling the International Holdings of Terrorist Groups Through Federal Statutory and Common-Law Suits}, 38 \textit{VAND. J. TRANSNAT'L L.} 679, 718–721 (2005) (citing Burnett v. Al Baraka Inv & Dev. Corp, 274 F. Supp. 2d 86 (D.D.C. 2003), where victims of the 9/11 World Trade Center attacks and their families filed tort claims against parties, including charitable organizations, banks and corporations, that provided direct or indirect financial support to al Qaeda). The District Court denied the defendants’ motion to dismiss the complaint, noting that liability could be found under the aiding and abetting theory. \textit{Id.}

\textsuperscript{100} DOBBS, \textit{supra} note 91, \S 115.

\textsuperscript{101} Cf. \textit{WILLIAM M. LANDES & RICHARD A. POSNER, THE ECONOMIC STRUCTURE OF TORT LAW} 85–87 (1987) (presenting an economic analysis of negligence, where the burden or cost taken to prevent or avoid accidents should not be less than the cost of expected damages).

\textsuperscript{102} Keith N. Hylton, \textit{Information, Litigation, and Common Law Evolution}, 8 \textit{AM. L. & ECON. REV.} 33, 50 (2006) (quoting Richard Posner’s theory that actors will breach a duty of care to another person if "the cost of accidents is less than the cost of prevention").
you do if the negligent state is a country that is not an adversary, such as Russia or Pakistan?

Unlike negligence, strict liability imposes liability regardless of culpability; it often is viewed as the polar opposite of negligence.\textsuperscript{103} Strict liability, which is synonymous with absolute liability, rests on a "but-for" causal model.\textsuperscript{104} Under strict liability, an injurer is liable "under all circumstances."\textsuperscript{105}

American courts generally are sympathetic to imposing liability without fault on landowners who put their land to unusual, non-mutual, or "abnormal" activities and, as a result, cause harm to adjacent property.\textsuperscript{106} Developing nuclear material for terrorists supports the analogy of unusual or "abnormal" activities at the international level. Moreover, economists use strict liability as a rule under which persons pay for harm that they cause, which is defined as harm that would not have occurred but for their conduct.\textsuperscript{107}

The "but for" causality standard is a useful device to attach responsibility to a state that, although at some fault, perhaps did not intend the full consequences of their activities. This is especially critical in countries such as Pakistan, in which one arm of the government may not endorse or understand activities conducted by another branch of the government.

Generally, a strict liability regime in civil law is most efficient in preventing harm that can be avoided by one person.\textsuperscript{108} The person

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\textsuperscript{103} See Richard A. Epstein, \textit{A Theory of Strict Liability}, 2 J. LEGAL STUD. 151, 152 (1973) (explaining that under common law negligence, defendants can only be held liable if they intended to cause the harm or "failed to take reasonable steps to avoid infringing the harm," whereas strict liability imposes liability regardless of defendants' intent or negligence).

\textsuperscript{104} See RESTATEMENT (THIRD) OF TORTS § 26 cmt. b (2005) (stating that the "but for" test of liability holds an actor liable if "in the absence of the act, the outcome would not have occurred").


\textsuperscript{106} See RESTATEMENT (THIRD) OF TORTS § 20 (2005) (providing that actors who perform "abnormally dangerous activity" can be held strictly liable for harm that the activity causes).

\textsuperscript{107} STEVEN SHAVELL, \textit{ECONOMIC ANALYSIS OF ACCIDENT LAW} 8 (1987) (noting that under economic theory, if the injuring parties' costs are equal to the costs of the harm caused, the injurers will have incentive to minimize accidents and "exercise the optimal, moderate level of care").

\textsuperscript{108} See Stephen G. Gilles, \textit{Negligence, Strict Liability, and the Cheapest Cost-
who can avoid the harm bears the full expected costs; faced with strict liability, he or she will exercise optimal care to avoid them. Application of strict liability against states that spread nuclear materials to terrorists appears to be particularly appealing in this regard because the nuclear material itself—rather than financing, technology or some other aspect of a terrorist operation—is the critical ingredient in constructing a terrorist nuclear device. In addition to development of civil and administrative responses to terrorism, some have suggested exploring “novel concepts of strict liability” for use in imposing criminal liability on even unwitting facilitators of terrorism.

One doctrinal formulation of strict liability focuses on shifting liability to injurers who can avoid causing injury at the lowest cost—the cheapest cost avoider. The concept refers to the party whose avoidance would be most allocatively efficient. Applied to nuclear doctrine, the cheapest cost avoider would focus on holding responsible that state which constitutes the weakest link in the global chain of nuclear materials. Since no nation wants to be the weakest link, scrutiny as the “cheapest cost avoider” provides incentive for those at the bottom to do better at preventing the leakage of nuclear material into the black market and to terrorist groups.

_Avoider_, 78 Va. L. Rev. 1291, 1305 (1992) (explaining that strict liability creates efficient incentives for an actor to avoid harm in cases where only one person would cause the harm, because that person bears all potential costs of the harm and can take steps to avoid an accident). In contrast, where many actors are liable for harm, the individual actors do not bear the full costs and therefore have insufficient incentive to prevent an accident. Id.

9. See, e.g., James Stemgold, Kerry, Bush Agree on Peril of Nuclear Terrorism, S.F. Chron., Oct. 28, 2004, at A14 (presenting John Kerry’s 2004 political slogan concerning the threat of nuclear terrorism—“No material. No bomb. No nuclear terrorism.”—as support that nuclear material is key to creating a nuclear device).

10. Thomas D. Lehrman, Acting Office Director, State Dep’t Office of Strategic Planning and Outreach, Remarks to the NPT Conference at the American University Washington College of Law (Feb. 9, 2006), available at http://usinfo.state.gov/is/Archive/2006/Feb/27-135117.html (promoting the use of strict liability to hold actors liable for facilitating the proliferation of weapons of mass destruction, as means to combat terrorism).

11. Guido Calabresi & John T. Hirschoff, Toward a Test for Strict Liability in Torts, 81 Yale L.J. 1055, 1060 (1970) (noting that the “cheapest cost avoider” test is not merely a cost-benefit analysis, but a consideration of which party is better positioned to weigh “accident costs and accident avoidance costs and to act on that decision once it is made”).

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The last clear chance doctrine is a fairly complicated exception to the defense of contributory negligence.\textsuperscript{112} The seminal case involved a plaintiff who tied his donkey in the road. As the donkey was eating grass, the defendant ran into it. The plaintiff was not available to save the animal when the defendant negligently struck it, but the plaintiff's negligence did not bar recovery against the defendant because the defendant had the last clear chance to avoid damage.\textsuperscript{113}

The doctrine says that even in cases in which the victim places himself in danger from which he could not escape, the defendant is still negligent if she could have avoided injury to him by exercising ordinary care.\textsuperscript{114} In these cases, a plaintiff victim's contributory negligence would not bar a negligence claim against the plaintiff.\textsuperscript{115}

Last clear chance was frequently at issue in railroad cases. If the plaintiff was, even through fault of his own, "unconscious or otherwise helpless on the tracks and the engineer could have discovered his danger and helpless condition in time to avoid running him down, the plaintiff's negligence in getting on the track in the first place becomes irrelevant and he is allowed to recover against the railroad."\textsuperscript{116}

In application to strategic deterrence, the last clear chance doctrine signals to potential adversaries that they would be held responsible for an attack inflicted on the United States despite whatever case they may make about prior American wrongs—real or imagined. Consequently, the United States will not adjust its response, or factor in contributory liability, if it is attacked with a nuclear weapon by a group that articulates a set of complaints as the basis for its strike.

\textsuperscript{112} See Michael D. Green, The Unanticipated Ripples of Comparative Negligence: Superseding Cause in Products Liability and Beyond, 53 S.C. L. REV. 1103, 1130 (2002) (explaining that under the “last clear chance” doctrine, an act of negligence supersedes previous contributory negligent acts).


\textsuperscript{114} See, e.g., Dominguez v. Manhattan & Bronx Surface Transit Operating Auth., 388 N.E.2d 1221, 1223 (N.Y. 1979) (holding a bus driver liable for injuring a child, although the child placed himself in danger by hanging from the side of the moving bus, because the bus driver could have avoided the injury by using ordinary care).

\textsuperscript{115} See, e.g., Robinson v. District of Columbia, 580 A.2d 1255, 1258–59 (D.C. 1990) (finding a driver liable under the “last clear chance” doctrine for injuring a pedestrian who did not use crosswalk to cross a street).

\textsuperscript{116} DOBBS, supra note 91, § 200.
Even in cases in which a state arguably acts to place itself in danger (e.g. invasion of Iraq), the defendant still retains the last clear chance of avoiding injury by exercising ordinary care. This places the onus on the sponsor of a terrorist group to stop a catastrophic attack or suffer a range of responses.

VI. CONCLUSION: ENHANCING DETERRENCE

Since the rise of the realist movement in American law, outside disciplines have been used to shape the way we think about law.117 This gave rise to the “law and . . .” phenomenon, with law borrowing insights from psychology, sociology, political science, and eventually economics and critical race theory. There have been fewer occasions to reverse the flow and apply the structure and logic of legal thought to policy questions.

The law of torts offers a new theoretical model that can bring greater clarity to the conundrum of nuclear terrorism. The model provides intellectual honesty and rigor to a nuclear doctrine of deterrence, helping us to refurbish a doctrine many regard as languishing in a state of disrepair. The exercise also helps to inform deterrence signaling to potential aggressors about how we might subjectively evaluate circumstances of terrorist nuclear attack, thereby introducing greater clarity—and a potentially lower threshold—to situations that might invite a massive response. This could be particularly useful for nuclear terrorist threats that arise from areas of the world where different belief systems, such as the blood feud, provide the basis for evaluating violence. Putting potential adversaries on notice with alternative deterrent models based in torts law sensitizes those adversaries to how we view the gravity of their conduct, and the potentially severe responses that conduct could provoke. Raising the prospect of a sufficiently severe response to previously ambiguous situations strengthens deterrence.

In strengthening deterrence, tort-centered approaches avoid many of the most controversial pitfalls of some other counterproliferation strategies—particularly anticipatory self-defense, preemption, or

117. See Neil Duxbury, Patterns of American Jurisprudence 89–97 (1995) (providing background on the legal realism movement that swept through North America during the first three decades of the twentieth century, and describing the social sciences’ impact in shaping modern perspectives of the law.)
preventive war—which are viewed by many as weakening the norms against armed aggression reflected in Article 2(4) the U.N. Charter. “The problem that the invasion of Iraq has brought to the fore,” wrote Professor Thomas Franck in early 2006,

is not primarily one of defining or reforming a right to anticipatory, preemptive, or preventive self-defense in the era of WMDs, daunting as such a project may be. The problem is that, even if such a commonly accepted right could be formulated, by treaty or by practice, it would be wholly illegitimate so long as some nations insisted on the right to interpret and apply the new rule unilaterally.118

Borrowing concepts from the civil law of torts can strengthen strategic nuclear doctrine in an era when strategic threats emanate from non-state actors and the weakest of nations pose the gravest risks to national security. The panoply of essential and expanding nonproliferation and consequence management tools provide a foundation of protection against nuclear terrorism. Counterproliferation is also being transformed, with a range of programs under consideration, such as the small, low-yield nuclear weapons for use against enemy WMD installations and underground bunkers119 and the development of quick-reaction conventionally armed ballistic missiles.120 Part of the transformation in

118. Thomas M. Franck, Centennial Essay, The Power of Legitimacy and the Legitimacy of Power: International Law in an Age of Power Disequilibrium, 100 AM. J. INT’L L. 88, 102 (2006). It bears keeping in mind, however, that decades before President George W. Bush contemplated a war in Iraq, the “death” of article 2(4) had already been pronounced. See Thomas M. Franck, Who Killed Article 2(4)? Or: Changing Norms Governing the Use of Force by States 64 AM. J. INT’L L. 809, 818–819, 835 (1970) ( “[t]he prohibition against the use of force in relations between states has been eroded beyond recognition”). Professor Frank attributed the demise of article 2(4) in part to increasing numbers of defensive wars against “indirect and vicarious aggression.” Id. at 819.

119. Cf. THOMAS MCINERNY & PAUL VALLELY, ENDGAME: THE BLUEPRINT FOR VICTORY IN THE WAR ON TERROR 143 (2004) (discussing the need for new military equipment to strengthen the war on terror).

120. See Ann Scott Tyson, Pentagon Seeks to Fund New Force of Conventional-Warhead Missiles, WASH. POST, Mar. 8, 2006, at A12 (quoting Hans Kristensen, director of the nuclear information project at the Federation of American Scientists, describing the advantage of quick-reaction conventionally armed ballistic missiles: “With estimated flight times of 12 to 24 minutes, the conventionally armed missiles could be used quickly against a remote and fleeting ‘terrorist stronghold’ or against a nation threatening a neighbor with a missile
counterproliferation should include new intellectual points of departure to refresh the deterrence doctrine.