

Rational Terrorists: How Terrorist Organizations Employ Economic Principles to Conduct Their Beastly Business

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Introduction

Good afternoon. I am Jurgen Brauer, professor of economics at Augusta State University in Augusta, Georgia. Before I delve into the substance of my talk, allow me to thank Prof. Robert Tatum for spearheading the effort to invite me here – I always appreciate the opportunity to travel to Asheville and enjoy the surrounding mountains.

I confine myself this afternoon to just one of many economic aspects of terror¹ – and by that I mean **transnational**, not domestic, terror – and that is that I want to better understand not “**the terrorist**” but the **terrorist organization**. You see, media, political, and fictional accounts of acts of terror invariably highlight “the terrorist” – the villain who controls the doings of his minions, the mastermind at whose bidding underlings risk laying down their lives. Having grown up in Europe, I

recall names such as Andreas Baader and Ulrike Meinhof of Germany's Red Army Faction of the 1970s, the Venezuelan-born "Carlos the Jackal" (Ilich Ramírez Sánchez) who during the 1970s and 1980s committed terrorist acts across a number of continents, the Palestinian Abu Abbas who signed responsible for the killing of an American tourist, Leon Klinghoffer, on the hijacked Italian ship *Achille Lauro* in 1985, and the Kurd Abdullah Ocalan whose group, the PKK, waged a terror war from the mid-1980s to the late 1990s in Turkey. One also recalls the name of Shoko Asahara, the mastermind of Aum Shinrikyo's sarin-gas attack in Tokyo's subway system in 1995 and of course that of the Saudi Osama bin-Laden (11 September 2001) and of the Jordanian Abu Musab al-Zarqawi, the prime suspect in the wave of beheadings and bombings in Iraq that followed the American war there in 2003.

Terror, in a word, has a face. But to focus on individuals is inadequate. The primary objective must not be to "take out" individuals but to undermine the organization within which they operate. Indeed, acts of terror "without a face" are more numerous than those "with a face." Who recalls any Basque terrorist's name, or that of any member of the Irish Republican Army (IRA), or of Japan's Red Army, of Colombia's FARC, or of the countless, nameless Tamil suicide bombers in Sri Lanka, or of those setting off IED's today in Iraq?

Basing counter-terrorist policy on terrorists, rather than terrorism,

would be like basing industrial policy on labor alone without also understanding the firms and industries in which labor works. What counts are not just the workers, but their recruitment, their training, their productivity, and how they are financed and supported. What counts is the entire gamut of concerns any business would need to deal with.

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So, let me speak then about “Rational Terrorists.” After indicating just what I mean by “**rational**,” I will spend a few minutes talking about terrorist and counter-terrorist **interaction** to give you a flavor of the moves both sides make, then switch to consider the topic from the point of view of a **hypothetical terror organization** – what it is thinking about given its beliefs about government action – and then switch back again to consider what the likely behavior of a rational terror organization implies for government **counter-terrorist policy**, and all of that in a way that is not intended to be comprehensive but intended to stimulate a bit of discussion after I have had my say.

Economists’ fundamental proposition is that a terrorist organization – like all organizations – is a rational actor, which is to say that, given its **beliefs**, it **chooses** the where, the when, and the how of attacks subject to a set of **constraints** which include the production costs it faces and the labor, capital, institutional, and other resources available to the organization. **We are not saying that the way terrorists come by**

their particular beliefs is “rational.” We are saying that the way they go about implementing their beliefs is “rational.” By analogy, we are not saying that McDonald’s Corporation is “rational” about its passionate belief of providing hamburgers to the world; we are saying, it is rational in the way it goes about doing so, and that it is responding to changes, or risks, in the market place in a reasonably sensible and predictable way. Economists treat a terror organization the way they would treat any company or firm, except that what is being produced is not a good or a service but is a bad or a disservice.^{2, 3} I wish to examine the matter as if I were one of these producers so that I am essentially facing a problem of production under adverse business conditions, adverse because government will throw hindrances in my way. I need to ask myself **three questions: first**, what hurdles can be erected to make business more difficult for me (the terror organization), **second**, how may I best respond to government action (the hurdles) if I do not wish to be pushed out of business? and, **third**, what difficulty might government encounter in placing hurdles in my way, and what can I learn from these difficulties?

The **hurdles** come in two categories, namely government actions that decrease my **revenue** and actions that increase my **cost** (or both). Prior to 11 September 2001, governments focused predominantly on increasing costs. The U.S. government famously introduced the use of

metal detector screening devices at airports in early 1973, doubled U.S. embassy security budgets in 1976, passed anti-terrorist legislation in 1984, and undertook embassy fortification measures in 1985 and 1986. These were passive, defensive measures intended to raise the cost to terrorists of getting through to the intended target. Among active, offensive measures the United States undertook a raid on Libya in 1986 (following a Berlin bombing) and, more recently, attacks on suspected terrorist facilities in Sudan, Afghanistan, and elsewhere. Serious efforts to intervene on the revenue side are much more recent.

From the viewpoint of a terror organization, the interventions are **logically equivalent**. Suppose that the current revenue and cost situation is such that a terror organization can carry out two terror attacks per time period. If revenue is constant but the cost per attack increases, then the organization will be able to carry out only one attack per unit of time. Conversely, if the average cost is constant but revenue declines, it also can carry out only one attack. Either mode of intervention is equivalent to the imposition of a “tax” on the business of terror. Since the economic consequence of a tax on terror is the same for a terror organization – reduced output – it would appear that government has the luxury of choosing the cheaper intervention (either on the revenue side or the cost side).

Government must, however, consider **two problems**. **First**, it must

consider its own expense in either reducing terror revenue streams or increasing terror production costs. This is important because to be effective, the reduction of the revenue stream requires virtually universal cooperation from other governments, and the cost of coordination among 200 or so governments and international organizations can be very high indeed (and I will talk about this in more detail in a moment). In contrast, unilateral defensive measures may be cheaper.⁴ **Second**, apart from the cost to government of imposing restrictions on terror organizations, government must also anticipate the reaction of the terror producers. For example, while it was relatively cheap to install metal detectors at airports as from 1973, an unforeseen, and unintended, consequence was that terror organizations changed their product mix: They produced fewer skyjackings and more embassy bombings. Similarly, it has been shown that a program of embassy fortification induced terror organizations to shift toward more assassinations and terror threats.⁵ In a word, in choosing the appropriate “terror tax,” government must choose not just the cheapest but the optimal option across the available product mix.

Whatever the resulting “tax” mode, terrorists can be expected – indeed, must be expected – to take a number of “**tax evasion**” measures. These consist of finding new sources of revenue or ways to lower the average cost of attack, or both. Regrettably, this can be achieved in a

disturbing variety of ways, as we now know from the empirical record.

First, one way is to raise alternative revenue. We have learned in recent years that revenue comes from licit as well as illicit sources and is transferred by western and non-western means that are difficult to monitor and, even if monitored, may not be detected or not detected in time. Unlike regular money laundering where “clean” money results from a “dirty” action, such as an illegal narcotics transfer, terror is a “dirty” action that follows “clean” money (we call this “reverse money-laundering”).⁶

Second, another option for a terror organization is to change the place of production, i.e., the location of attack, away from more fortified targets to less fortified targets or, what amounts to the same thing, from more fortified countries to less fortified countries, hence the recent large number of attacks, post-9/11, in so-called developing nations (e.g., Bali, Indonesia, or Turkey, or Egypt). Of course, it does not help to bring potential victims, such as aid workers or journalists or private reconstruction contractors, closer to terrorist bases of operations. Instead of bringing terror to people, as in 9/11, we now bring people to terror – and lower the cost of attack. (This might be labeled “reverse tourism.”)

Third, a terror organization can wait for the “tax” effort or enforcement intensity to subside. A terror organization can wait until government vigilance declines; it can contribute to declining vigilance

by changing the timing of attack. There is empirical evidence that terror attacks and counter-terrorist action move in cycles whereby an attack is followed by intense counter-terrorist measures, and these in turn are followed by a delay in a further round of attacks.

Fourth, terror organizations may be expected to improve the efficiency of their operations which also lowers average costs. For example, economies of scale can be achieved by sharing fixed costs of planning across a greater terror effort for a given time period. Economies of scope can be achieved by sharing fixed costs across a larger set of products, i.e., not more attacks but more types of attacks. Economies of agglomeration may be achieved when terror groups locate in close proximity to each other, and economies of learning can take place when a successful attack by one group signals to other groups what works. To some degree, all of these behaviors have been observed and may be anticipated in future, and all of these result in efficiency gains.

Fifth, terror organizations can, and do, change their product mix. Already mentioned was the product substitution from one attack mode to another, say from skyjackings to assassinations to hostage-taking events. But in particular, there is empirical evidence that not only the mode of attack responds to the “taxes” placed on a particular mode of attack, but that the lethality, the deadliness, of the average attack has

increased. This is, in part, because terror threats, which need not be followed through, have become less credible with the advent of more effective counter-measures, and terrorists appear to have responded by conducting fewer⁷ but more deadly attacks.⁸ Substitution can take place from bombings to assassinations, but it can also take place from bombings without casualties to bombings with casualties.

Sixth, terrorist organizations can, and do, innovate and offer new products or product targets, e.g., in addition to common targets such as embassies, military compounds, and tourist spots, they can release nerve gas in subway tunnels, fly airplanes into buildings, conduct a large number of beheadings in public, and seize public schools or theaters, and we may expect more “innovation” of this sort especially as the government “tax” on terror compels terror groups to disperse and to lower their rate of communication and coordination.

Seventh, terror organizations further substitute by changing their risk-profile. Old-line terror organizations driving on left-wing ideology in the 1960s, 1970s, and 1980s were relatively risk-averse, in part because their finance base and labor pool were small, and they could not be expected to put limited financial and human resources at high risk of confiscation or imprisonment. In the 1990s and 2000s, these groups have been replaced by terror groups with a more risk-loving profile, in part because their finance and labor pools are larger.

Eighth, I have spoken mostly of “a” terror organization or even “the” terror organization but there is empirical evidence that suggests that terror activity clusters, i.e., when one organization undertakes action and strains government responses, it becomes relatively cheaper for other terror organizations to carry out their own attacks at that time. The intent is to induce government “force thinning,” an attempt to diffuse a concentrated government response to one attack and inhibit government’s ability to respond simultaneously to multiple attacks or threats of attacks.

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My **overriding message** is that the effort to “tax” terror out of business calls forth resistance and that it breeds **innovation**, breeds **substitution**, and breeds efforts to increase **productivity**, all of which reflect at their foundation the operation of economic principles such as the principle of substitution: Terror organizations substitute by changing the time of attack, by changing the mode of attack, by changing the capital-intensity of attack, by changing the lethality of attack, by changing the location of attack, and so on. All of these are “rational” responses: A terror organization looks at its available resources, looks at the hurdles being put in its way, and then figures how best to achieve its objectives anyhow. The only thing that may be “irrational” is how a terror organization comes by its particular beliefs, but not how it goes about

implementing them.

It is also interesting to note that terror organizations can compete with each other. The 9/11 attack in particular was so bold and commanded so great a response by the governments of the United States and its European allies as to drive up the cost of conducting terror strikes for relatively small organizations such as the IRA in Northern Ireland and ETA in the Basque region in Spain, both of which now have pledged to renounce terror. In the past, especially in the 1970s, many terror organizations shared a commonality, namely a “left-wing ideology,” and their activities appeared to be loosely coordinated and “cooperative” in the sense that the actions of one group in one country would not adversely affect the survival of another group in another country (no “negative externalities,” or spill-over effects, as an economist might say).⁹ A certain “honor among thieves” prevailed. But the “new” terror, associated with Islamic fundamentalism, does *not* share an ideological commonality with the “old” terror groups, and therefore did not particularly care about spill-over effects that might drive the “old” terror organizations out of business.

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What does any or all of this imply for government policy? What are the options and prospects for counter-terrorism?¹⁰ Unfortunately, they are not particularly good because it can be shown that governments tend to

overinvest in defensive measures and underinvest in offensive measures. To see why, consider a set of **asymmetries** between terror organizations and their targets:

Terror organizations

- < **target poor**
- < weak relative to adversary
- < **long-term time horizon**
- < **agreement on common enemies**
- < can be restrained or unrestrained in their response
- < non-hierarchical organization
- < **small size furthers common interest**
- < **luck needed only once**
- < reasonably well-informed about government responses

Targeted governments

- < **target rich**
- < strong relative to adversary
- < **short-term time horizon**
- < **no agreement on common enemies**
- < generally, must be restrained in their response
- < hierarchical organization
- < **large size hampers common interest**
- < **luck needed always**
- < not well-informed about terrorist organizations

Source: Enders and Sandler (2006, Table 6.1, p. 144).

These asymmetries provide a tactical advantage to terror organizations, and it is within the scope of these (and other) asymmetries that **government must choose** between offensive and defensive measures. **Offensive** measures include actions such as infiltration, preemptive strikes, and retaliatory raids, mostly aimed at raising the production cost for terror organizations. **Defensive** policies include efforts such as preventive intelligence gathering, installation of technical barriers, target hardening, and new anti-terror laws. The practical problem is that

defense measures possess different **properties** than offensive measures do. In particular, defensive measures – building a wall around my country – deflect terror attempts toward softer targets elsewhere and thereby impose a cost on other countries. But of course, other countries can do the same thing, and thereby impose a cost on me. This seems senseless, except when one considers that offensive measures usually require coordination among several governments, and here we run into what economists refer to as the “free-rider” problem. If, for instance, the United States were to take the lead in pursuing unilateral offensive action, it essentially assumes the full cost of doing so and, if successful, provides a benefit to other countries, countries that, once the threat is removed, or even while the threat is being removed, have no incentive to pay a share of the cost. And so the United States will engage in, for example, preemptive or retaliatory strikes only if the benefits to itself outweigh its costs, regardless of the benefits that may accrue to other countries. But if the benefits of offensive action are judged too small relative to the cost incurred, the United States will then prefer to engage in defensive action only. Of course, other countries reason along similar lines, and so we can explain the empirical regularity of why countries tend to overinvest in defensive measures that require no international cooperation and underinvest in offensive measures that do require such cooperation. In a word, the international response to transnational

terrorism is sub-optimal.

With these asymmetries and the dynamic between offensive and defensive measures in mind, consider the following points regarding **counter-terrorism**. **First**, counter-terrorist action really ought to be broad-based across all countries and agencies. This might be summarized as going after “everything, everywhere, all the time.” But to pursue such a truly comprehensive program is extremely costly and, really, unrealistic, as we are now finding out. The “free-rider” problem does exist. Thus, we arrive at the paradox that if counter-terrorist action is to succeed it cannot be piecemeal and haphazard, and yet we know that it will be and is, in fact, piecemeal and haphazard.

Second, while governments struggle with international counter-terrorist coordination, each one of them must beware of terrorist substitution and fortify likely substitute targets. If government proceeds in a step-wise defensive fashion, as it must for it cannot protect all potential targets simultaneously, it must endeavor to direct likely terrorist attacks toward those substitute targets whose net cost to society is the least – and it is by no means easy to determine just which those targets might be.¹¹

Third, for a terror organization, a low-labor, high-tech attack may be equivalent to a high-labor, low-tech attack. This implies that going after the financing that funds hi-tech events will induce a terror organization

to recruit more labor to switch to low-tech events. The organization will attempt to stay on the same “isoquant,” i.e., producing the same amount of damage but with a different combination of labor, capital, and other inputs, given its overall resource budget, or resource constraint. Again, for government it is important to go after “everything, everywhere, all the time” in order to make that overall resource constraint more biting, but that is exactly what governments by all accounts have not achieved.

Fourth, one potential counter-terrorist measure that has not received much attention is that before a person joins a terror organization – and even thereafter – that person always has an option of choosing to participate in a terror action or a non-terror action. Note that governments’ counter-terror activities almost always are “sticks” to counter the terror choice, whereas the “carrots” of offering an incentive to choose a non-terror action are largely missing from the debate, e.g., offering people alternative means of expressing dissent. This is a research and policy agenda that has not been sufficiently explored. We are better at creating obstacles than we are at crafting incentives that might induce people to choose alternative, non-violent behavior.

Fifth, in liberal democracies terror success drives on the constitutional free-press guarantee. (Few attacks take place in countries where the media are state-controlled.) There is empirical evidence of media congestion: If there are too many terror events to be processed by

the media, the “political message” is lost. One effect of this congestion is that we may expect more spectacular terror events, as terror groups compete for attention. “9/11” was an example, as was the Beslan school attack in Chechnya (2004), as were the gruesome public beheadings in Iraq (2004), as were the Madrid train (2004) and London subway attacks (2005). Terror attacks now are not just local or regional but truly global events, facilitated by cheap video and Internet technology.

Regrettably, given the rules under which open societies function, it is unlikely that media attention to the personal drama and tragedy of terror events will subside. So, from that perspective also it is entirely logical to expect terror organizations to continue doing what they do.

Sixth, even if transnational terrorism is directed primarily against the United States (and over the past almost 40 years for which we have data, about 40% of all transnational terror events involve U.S. targets), this country cannot simply dispense with coalition-building, fortify its own borders, and deflect terrorists toward non-U.S. targets. The reason for this, of course, is that U.S. diplomatic, military, business, and tourist interests outside the United States can still be attacked. The same holds true for other countries, although in different degree. And that is a problem. The lower the probability of my country being the target of attack, the lower my incentive to contribute to joint counter-terrorist measures such as intelligence collection and sharing, i.e., the “free-

rider” problem I referred to earlier. A redeeming thought is that inasmuch as a stronger or wealthier country can deflect terror attacks to other countries, these other countries will have more of an incentive to cooperate. If a leader leads, a follower might follow because of the implicit threat of becoming a substitute target,¹² and I would argue that this is exactly what happened immediately after 9/11 when the United States could issue credible threats against member states of the EU who “all of a sudden” found numerous terrorist cells in Britain, Italy, Spain, France, and Germany that somehow they did not know of beforehand. Unfortunately, unless the wealthier or more motivated party makes counter-terrorist resources available to less well-off or less motivated countries, “weak links” will exist that terror organizations will seek to exploit, and that plays into another one of those asymmetries which is that terror organizations are better informed about government than vice versa.

4. In conclusion

Let me wrap up. Using economists’ language illustrates that there is no analytic difference between producers of goods and services and producers of bads and disservices. (Obviously, there is a moral difference.) This language has the advantage of permitting us to abstract from the problem of terror *per se* and to bring to bear the considerable

experience that domestic governments and international organizations have in regulating domestic and transnational business. In all instances the regulatory intent is to direct business into sanctioned areas of activity. For example, health care policy or trade policy or environmental policy drive on regulations designed to affect behavior. Firms' behavior is steered into desired directions under threat of adverse government action. It is useful to view terror producing firms in a similar way but with the much more onerous "everything, everywhere, all the time" requirement if one wants to regulate these "firms" out of business altogether, and that regulatory effort must be global without any loopholes but, as I indicated, that is not going to happen. In the end, we are stuck with approaches that are cobbled together and second-best.

Finally, for those of you who may wish to pursue the topic, allow me to recommend a **book**, just published, by Walter Enders and Todd Sandler. The authors are the world's foremost experts on the topic and recently were presented with a prestigious award by the National Academy of Sciences for their work on the theoretical and empirical analysis of the economics of terrorism.

Thank you.

Notes

1. The economic literature on the topic is large. Handy overviews are provided, e.g., by Gold (2004), Frey *et al.* (2004), Sandler and Enders (2004), and Enders and Sandler (2006).
2. As Professor John Keegan, the eminent military historian, says in his *History of Warfare*, “even the pirate needs capital to start in business” (1994, p. 64).
3. If terrorists *supply* a disservice to the market, one may wonder who is the *demand*. This need not be a conundrum as the situation may be compared to planting and tending a vegetable garden at home where the producer is also the consumer. Rather than producing for somebody else’s satisfaction, you produce for your own satisfaction of needs. In either case – whether there is terror production for an external market or for an internal market – we may conceive of the existence of a “market for terror,” where the objective of government actors is to disrupt trade, much as we wish to disrupt trade in the international narcotics, prostitution, small arms, and other crime areas.
4. Disturbingly, one cheap measure is to “collude” with terror organizations, an implicit arrangement by which a terror organization will not be pursued domestically so long as attacks take place elsewhere. See Lee (1988), Brauer (2002).
5. Enders and Sandler (1993). Threats are costly as precautionary measures must be taken. Moreover, the mere threat of attack can lead to substantial redirection of tourism and of direct foreign investment.
6. See, e.g., CiSP, 2003.
7. Enders and Sandler, 2006, Figure 3.2, p. 61.
8. Enders and Sandler, 2006, Figure 3.6, p. 66.
9. Also “cooperative” in the sense that they appeared to share some training facilities, i.e., engaged in making use of economics of scope.
10. See Sandler and Hartley, 1995, 1999; Enders and Sandler, 1993, 2000, 2006.
11. Efforts by the United States and western allies to train counterparts in developing nations raises the relative cost of attack there and may be expected to lead to more attacks in the developed countries that are rendering the assistance.
12. In game theoretic terms, this may be represented as an assurance game.

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