

# Protecting People Against Terrorism: The Problem of Non-Replicable Targets

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## Abstract

Frey and Rohner (2007a) argue for government precommitment to reconstruction of cultural monuments following terrorist attacks, showing that such a precommitment could alter terrorists' expectations and thus deter attacks on monuments. We argue that many potential targets, such as prominent skyscrapers, could not or would not be identically reconstructed following a successful terrorist attack. By embedding the Frey and Rohner cultural-monuments analysis within a many-targets framework, we show that precommitment to monument reconstruction will serve primarily to redirect terrorist attacks toward non-replicable targets.

## INTRODUCTORY DISCUSSION

Frey and Rohner (2007a, hereafter F&R) are concerned with the targeting by terrorists of “cultural monuments”, defined as “the most important buildings representing a nation's cultural identity.” They argue that a government commitment to rapid reconstruction of any monuments that are destroyed will discourage attacks.

“If terrorists expect the national monument to be rebuilt, they are less likely to attack it in the first place, as they would like to make a long-lasting symbolic impact. In this way, a credible and firm commitment by a government to reconstruct a monument, should it be destroyed, can deter terrorists from attacking, implying that reconstruction is not needed. Obviously, expectations are of crucial importance for the present issue. A relevant question to ask is: Can the terrorists' expectations be influenced in such a way as to lower the risk of them being motivated to carry out a terrorist attack? ...Using a simple game-theoretic model, [the present contribution shows] that, by firmly committing themselves to the reconstruction of icons that are destroyed, the government reduces the terrorist threat.” (F&R, pp. 247, 251)

F&R do not discuss the possibility that, were a reconstructionist policy to be implemented, terrorists simply might redirect their efforts toward other targets. While the standard microeconomic notion of utility-maximizing agents does imply that terrorists' *utility* will fall if their first-choice plots are rendered undesirable, that notion is silent on whether terrorist activity will decline – and it is similarly silent as to the effects of the terrorists' second-choice activities on the utility of non-terrorists. Terrorists thus may remain determined to attack even when there

is no possibility of making a “long-lasting symbolic impact” by physically damaging iconic structures. This matter is of no small concern, as it suggests the possibility that attention-craving<sup>1</sup> terrorists deterred from attacking monuments could turn their attention to human targets.<sup>2</sup> Indeed, Congleton (2002) implies that a wise policy might seek to *induce* committed terrorists to attack cultural monuments:

“The losses from terrorist acts clearly can be reduced by ‘encouraging’ less-destructive terrorist methods—say, blowing up a symbolic structure, such as the Washington Monument, rather than destroying a building occupied by thousands of people, such as the World Trade Center.” (p. 54)

Congleton’s chosen example, obviously of historic import, does have monument-like characteristics; to have erased the World Trade Center from the New York skyline was certainly an action consonant with terrorist goals described by F&R. However, it is difficult to argue that a reconstructionist policy can be applied to skyscrapers (and F&R do not make such an argument), for several reasons:

- Private entities usually have ownership or similar interests in large, functional buildings. Therefore governments will most often not be in position of authority from which they can order an identical reconstruction of a destroyed skyscraper.
- Upon the loss of a skyscraper, economic considerations will call for any replacement structure to be constructed in such a manner that makes generally efficient use of current technologies. This may happen to preclude the external appearance of a new building

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<sup>1</sup> As documented by F&R (p. 245), much research exists showing that “a major goal of terrorists is to gain media attention.”

<sup>2</sup> Rohner and Frey (2007b, pp. 140-141) find that the relationship between terrorism-related deaths and press coverage of terrorism is much stronger than the relationship between terrorist incidents and press coverage of terrorism.

from matching the appearance of the destroyed building. For example, to duplicate the external structure of a 40-year-old plan may limit what might otherwise be achieved with regard to internal building function.

- When the destruction of a functional building is accompanied by loss of life, there may exist political pressures not to rebuild or to alter building plans so that a memorial may be placed on the site.

Skyscrapers, then, are perhaps the most monument-like of a general class of non-replicable potential targets for terrorist attacks.<sup>3</sup> Should a reconstructionist policy be effective at reducing the absolute appeal to terrorists of replicable targets, it must necessarily increase the relative appeal to terrorists of these non-replicable targets. Thus the existence of a class of non-replicable targets has significant implications for the claim that reconstructionist policy can reduce terrorism. A relevant question is whether the introduction of such a policy would cause terrorist substitution into attacks on non-replicable targets or cause no such substitution (and thus simply reduce the number of attacks on replicable targets).

## FORMAL DISCUSSION

We will adopt a microeconomic framework suggested by Potts (2000) in which an economic agent acts by drawing a set of resources (elements) from his environment.

“While we assume that none of these elements are immediately useful to the agent, we

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<sup>3</sup> In this paper, the term “non-replicable” does not necessarily mean that the construction of a replica is *technologically* infeasible, but that it is infeasible nonetheless. The class of non-replicable targets includes not only physical structures but also living beings.

allow that specific combinations possibly will be... The agent's problem is to find the good combinations, so that a single agent is charged with the creation of 'value in use' by the discovery of specific combinations of primary resources. The agent must therefore engage in experimentation by combination, searching through the space of possibilities for useful combinations." (p. 115)

Useful combinations are those that satisfice, that is, those that yield expected utility in excess of opportunity costs.

In the context of the present problem, we conceptualize agents as could-be plotters of terrorist activity. Resources in the environment include other agents, tools, recipes, targets, and so forth. No single resource in any agent's endowment is sufficient to mount a terrorist plot, but rather a combination of elements is necessary. The agent searches for terrorist plots (combinations) that satisfice, that is, that exceed the expected utility of refraining from terrorist activity. If he finds at least one such plot, he puts a plot into motion; otherwise, he does not.

Assume that there is a population of such agents, and assume that the terrorist threat can be measured by the number of agents plotting terrorist activity.<sup>4</sup> For a reconstructionist policy to reduce the threat, it must be the case that some agents would have found a satisficing plot were it not for the policy, but find no such plot with the policy in place. This will hold if there exists a nonempty set of agents:

- who locate zero satisficing plots for which the target is not a cultural monument,
- who locate at least one satisficing plot for which the target is a cultural monument, and

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<sup>4</sup> For simplicity, we are abstracting away from concern with variance in the severity (*i.e.*, the level of utility loss suffered by the victims) of terrorist attacks; we are also presuming that no agent can mount multiple plots. Extension to account for these possibilities may be a subject of future research.

- who, for each satisficing plot located, do not locate a substitute target such that the altered plot (leaving non-target plot elements unchanged) satisfies.

Or, expressed mathematically: If a plot is specified by a set of elements, then for a reconstructionist policy to reduce the number of agents plotting terrorism it must be the case that some agents (indexed by  $i$ ), given endowments  $M$  of cultural monuments and  $T$  of non-monument targets, locate only those satisficing plots where, for every fixed set of non-target plot elements  $\mathbf{X}$ ,

$$EU(\{\mathbf{X}, m\}) > C_i > EU(\{\mathbf{X}, t\})$$

where  $m \in M_i$ ,  $t \in T_i$ , and  $C$  is the opportunity cost from forgoing terrorist activity.

It is, of course, an empirical question as to whether these conditions could hold in the real world. One piece of supporting evidence might be whether and to what extent that, holding other factors constant, terrorist attacks that physically damage cultural monuments can receive greater media coverage (and thus, we will assume, yield greater utility to the attackers) than can attacks on other targets.<sup>5</sup> One might expect that the magnitude of any difference would vary directly with the likelihood of the conditions holding true, as a larger difference should mean a wider interval in which any given could-be terrorist's opportunity cost may fall. Figure 1 illustrates this intuition, displaying three possible relationships that could exist between the expected utility from a particular plot (with fixed non-target plot elements  $\mathbf{X}$ ) and the suitability of the various possible targets at which the plot could be directed. Targets are arrayed on the horizontal axis from left to right in order of the plot's increasing utility. In relationship (A), there is diminishing

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<sup>5</sup> This evidence would only be suggestive, however, as the relevant variable in our model is not the observed utility of a successful attack but rather the expected utility of a plot. A complete analysis would need to take into account (among other variables): terrorist resources, effectiveness of onsite security for different targets, and effectiveness of general police or intelligence work in foiling plots against monuments relative to plots against other targets.

marginal utility in increasing target desirability; in relationship (B), there are constant returns to target desirability; in relationship (C), there are increasing returns.

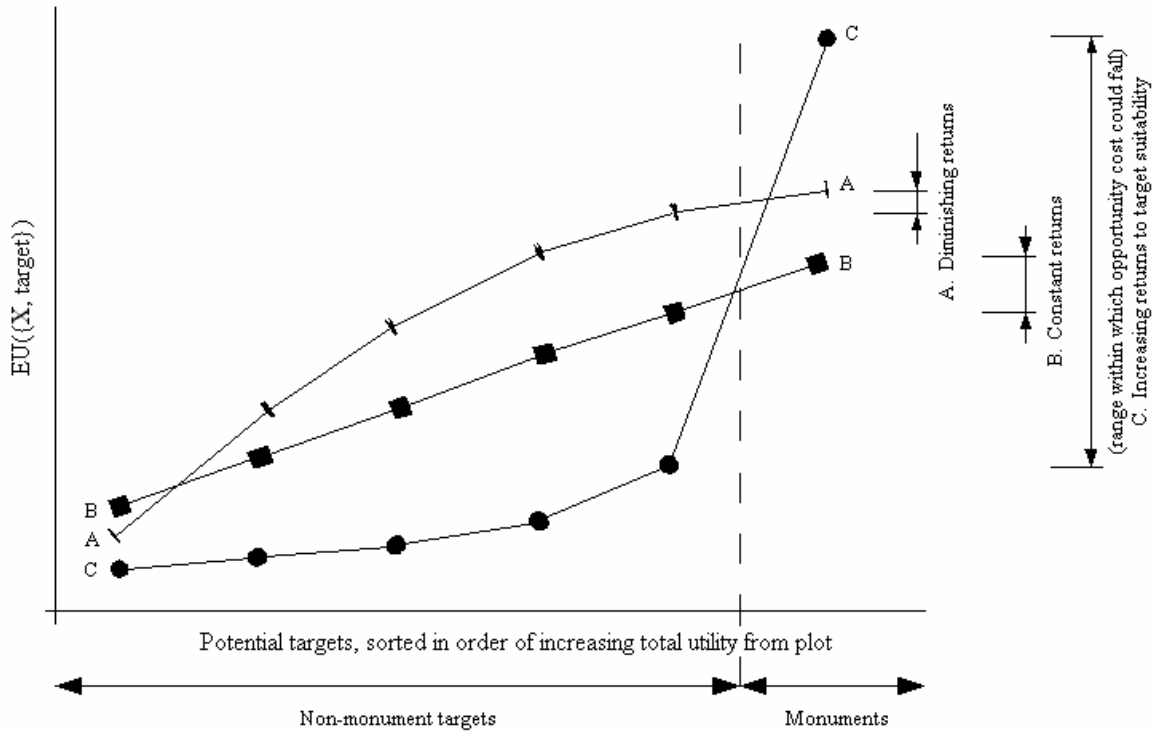


Figure 1.

Figure 1 suggests that a world in which there are increasing returns to target suitability over the relevant range of decision would be the most appropriate in which to pursue a reconstructionist policy. Given that the plotters' resources are assumed fixed, a world of such increasing returns would be one in which, for instance, terrorists with the operational capacity to bring down a large structure in New York City could rationally expect far greater media attention from destroying the Statue of Liberty than from destroying the Empire State Building. In light of the incredible media attention directed to the destruction of the World Trade Center, we find it somewhat difficult to believe that empirical work would show this to be a plausible result.

A serious impediment to mounting any empirical study, however, is the paucity of historical terrorist plots that fit the F&R model. Plots that are amenable to deterrence by a reconstructionist policy must, by definition, be terrorist plots that seek to physically and visibly damage cultural monuments. F&R claim that “there have been several attempted attacks on cultural monuments in the recent past,” listing four terror threats in support of this claim. However, there is little evidence that any of these four plots were aimed at causing visible physical damage to the monuments themselves.<sup>6</sup> Other examples of planned-but-unsuccessful cultural-monument attacks may of course exist; certainly some examples may be kept secret by authorities for security reasons, though perhaps not many as authorities often make public statements about thwarted plots.<sup>7</sup> Our research efforts do strongly suggest, however, that there have been very few successful terrorist attacks on monuments *qua* monuments.<sup>8</sup>

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<sup>6</sup> The first threat mentioned by F&R was a plot to set off explosives in a Christmas market near the Strasbourg Cathedral in France in 2000; this plot was thwarted by French and German police work (Von Derschau 2004). The second is a 2002 failed plot to attack the Eiffel Tower in Paris; the exact nature of the plot is uncertain as the plot was at a “vague planning stage” when it was foiled, but court evidence indicates that a gas or other chemical attack was planned (Lichfield 2006; Smith 2006). The third is a 2005 plot against St. Peter's Basilica in Rome; we have not been able to find any report of this plot. The fourth is a 2005 plot to attack the House of Commons in London; like the 2002 Eiffel Tower plot, this plot was not aimed at damaging the building but rather was a planned sarin gas attack. The plot was uncovered by British police and MI5 decoding emails, with the help of an informant (Leppard and Winnett 2005).

It should be noted that F&R argue for the reconstructionist policy partially on the basis of cost savings. They claim that many governments have sought “maximum protection” in their onsite security for monuments, and that substitution into investment in reconstruction planning would enable governments to reduce onsite security measures to an “optimal” level. (p. 246) However, F&R provide no formal support for the assertion that current investment in onsite security is above an optimal level, and (as shown above) each of the monument-directed plots they mention were foiled not by onsite security but rather by detective work. Thus we find it to be unclear whether a reconstructionist policy for cultural monuments could yield savings by reducing either the need for onsite security or that for general policing and intelligence operations.

<sup>7</sup> The Federal Bureau of Investigation often releases details of such plots. A sample can be seen by searching for “foiled” at <http://search.fbi.gov/>.

<sup>8</sup> The Memorial Institute for the Prevention of Terrorism's “Terrorism Knowledge Base” includes a few examples of monuments that were targeted by terrorists: a statue of Pontius Pilate by an anti-clerical group in France (1983); a statue of Harry Truman by the Khristos Kasimis Revolution Group in Greece (1986); a statue of Douglas MacArthur by the New People's Army in the Philippines (1988); and a statue of Abraham Lincoln by leftist guerrillas in Chile (1992). The National Counterterrorism Center's “Worldwide Incidents Tracking System” also has about six similar examples of minor statues and monuments destroyed between 2004 and 2007.

## CONCLUSION

While the available historical evidence is nearly non-existent, our formal model implies that a policy of reconstruction for cultural monuments would result in very little if any outright deterrent effect on the terrorist threat; it is far more likely that terrorist activity would be redirected against non-replicable targets such as skyscrapers. We thus find cause for normative concern with regard to the advocacy of a reconstructionist policy. If determined terrorists become convinced that attacks on symbolic structures are futile, they will pursue alternate and perhaps more deadly means of attracting media attention.

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