



Media congestion limits media terrorism

John L. Scott

To cite this article: John L. Scott (2001) Media congestion limits media terrorism , Defence and Peace Economics, 12:3, 215-227, DOI: [10.1080/10430710108404985](https://doi.org/10.1080/10430710108404985)

To link to this article: <https://doi.org/10.1080/10430710108404985>



Published online: 19 Oct 2007.



Submit your article to this journal [↗](#)



Article views: 482



Citing articles: 15 View citing articles [↗](#)

MEDIA CONGESTION LIMITS MEDIA TERRORISM*

JOHN L. SCOTT

*Department of Economics and Finance,
University of Louisiana at Monroe,
Monroe, Louisiana 71209-0130*

(Received 2 November 1999; Revised 15 March 2000; In final form 27 March 2000)

In the early 1980s scholars and laymen expected an explosion of terrorism fed by media attention. Instead, the quantity of terrorism settled into familiar patterns, rather than spiraling upward. This paper attempts to explain why the dire predictions did not come to pass. We develop theory that explains how terrorists compete for media attention. We find that in equilibrium terrorists congest the media, limiting the benefits of additional terrorist incidents. Data from 1969 to 1984 substantiate our theoretical result. During the period, when the media provided more coverage to one terrorist incident, they provided less coverage on other incidents.

KEY WORDS: Terrorism; Media; News; Conflict; Common property; Empirical model

JEL CLASSIFICATION: D700; D740; H410

INTRODUCTION

Both scholars and laymen assert that publicity is the principal goal of the modern terrorist. The Second Conference on International Terrorism (1985) reports,

The most recent and quintessential form [of terrorism], created by the PLO in 1968, can be called "media terrorism." It consists of random attacks on anybody. Its object is . . . to publicize . . . to spread

*Two anonymous referees suggested changes that improved this paper.

the cause and the name of the terrorist group... Without the presence of the media, the acts would be meaningless; they would not even take place (pp. 185-186).

Chalfont (1980), more plainly, states, "... terrorism would be impotent without publicity." (p. 79) Alexander (1980) adds, "... to terrorists, an extensive coverage by the media is the major reward and... [the media] willingly or unwillingly become tools in the terrorist strategy..." (p. 179)

If media attention is the principal tool and goal of the terrorist, then one is quickly led to the conclusion that reporting on terrorism increases its frequency by raising the marginal benefits of terrorist activities. In the words of Schmidt and de Graaf (1982), "The most serious effect of media reporting on insurgent terrorism... is the likely increase of terroristic activities." (p. 142)

Having said that the media is a tool of the terrorists, that media attention is the key "demand" of the terrorist, and that reporting increases terrorism, one might conclude, as do Kelly and Mitchell (1981), "Terrorists will go on killing and the media will continue to attract attention to them. Unfortunately, the spiral of violence seems never ending." (p. 291). We draw no such conclusion. Our skepticism is based on our assumption that the relationship has three relevant actors, not two. While terrorists and the media try to please each other, the media must consider the public's preferences for various kinds of news coverage. If terrorism becomes boring to the public, then competing news agencies respond by providing less coverage.

Factors on both the supply side and the demand side work against the terrorist. On the supply side, terrorists' resources are scarce and governments are much better financed than terrorists. On the demand side, journalists do not face a bottomless pit of public interest in any one topic, which they can fill with news on this topic, *ad infinitum*. Our ability to process information is limited, and many issues compete for our attention. Even if terrorists continue to do their part in Kelly and Mitchell's (1981) "upward spiral of violence," they may find that they each attract less media attention as more terrorists vie for the public eye. We call this the "media congestion effect." As Delli Carpini and Williams (1987) state, "On a given evening, other pressing events may push out coverage of terrorist events that would be covered on a less 'busy' evening." (p. 60)

We concentrate on the public, not the state, as the audience of the terrorist. In democracies with a free press, elected officials will seek

to please the public in order to maintain power; hence playing to the public is merely the terrorist's intermediate step in playing to the state. To fully appreciate how intertwined the two audiences are, consider a terrorist who wishes to use terror to influence the state, but not the public. Even direct targeting of state officials, such as assassinations of judges by South American drug cartels, sends a strong message to the public regarding the perils of discomfiting the cartel.

In the following section we present our theoretical model, which features terrorists in competition with one another for a finite pool of public interest. Our theoretical model has two stages. In the first stage, the media chooses the amount of coverage to allot to individual terrorist incidents. In the second stage the terrorist uses the media's decision outcomes to choose the number of incidents to perpetrate. We then discuss previous empirical work on terrorism and the media. Next we introduce our data. Finally, we present our empirical results and offer conclusions.

THE THEORETICAL MODEL

Stage 1: the Media's Choice

We view news as a consumable good that is provided by the media. We assume that the media wishes to provide the utility-maximizing mix of various types of news and other coverage. The press may maximize its own utility, or may present coverage that maximizes the public's utility function. Public preferences will shape coverage if the broadcast and print firms compete with each other for consumer dollars and ratings; hence, we assume that the press attempts to give the public the mix of various types of news and of other coverage that maximizes the public's utility.¹

We assume that the public has the utility function, $U = N^{1-\alpha} \prod_{i=1}^x T_i^\alpha$, where T_i is the quantity of terrorist news reported on one of the "x" terrorist incidents, N is the total quantity of television time or newspaper space not devoted to terrorist news (e.g. sports, documentaries, game shows, sitcoms, dramas, and non-terrorist news), and $0 < \alpha < 1$.

Our utility function's indifference curves slope downward, indicating that if the amount of terrorist coverage increases, increasing the

¹We treat the public as a single decision maker, not as a heterogeneous group of individuals.

public's utility, then the media could, in theory, compensate for this by decreasing the amount of coverage on other incidents or on non-terrorist coverage. The indifference curves are convex, which means that given any two bundles of coverage, between which the public is indifferent, a linear combination of these bundles is preferred to either bundle (loosely speaking, the public prefers variety).

We assume that the total quantity of programming (or pages) is constant. For television, a constant quantity of total programming would involve having regular broadcast hours. In print journalism, a constant quantity of programming is equivalent to maintaining a fixed number of pages. There are good reasons to maintain stable prices for newspapers, so the assumption is justified for print. For television, the constant quantity of programming might be a 24 hour broadcast day. Thus we have the constraint:

$$K = N + \sum_{i=1}^x T_i,$$

where K is the constant amount of programming.

If the total coverage were not fixed, for instance if we allowed the number of newspapers or the number of television stations to increase in response to terrorism, then we would need to restructure our model. To express the constraint in such a model, we would need a full specification of the competitive market of the broadcast media. Various broadcast media would be motivated by profit maximization and their profit levels would be interdependent. The final constraint would be the necessity of maintaining non-negative economic profit in the long run. Such an extension is beyond the scope of this work.

The media's problem of maximizing the public's utility with respect to their coverage constraint has the following Lagrangian:

$$L = N^{1-\alpha} \prod_{i=1}^x T_i^\alpha + \lambda \left(K - N - \sum_{i=1}^x T_i \right). \quad (1)$$

The first order necessary conditions are:

$$\partial L / \partial N = (1 - \alpha) N^{-\alpha} \prod_{i=1}^x T_i^\alpha - \lambda = 0 \quad (2)$$

$$\partial L / \partial T_j = \alpha N^{1-\alpha} T_j^{\alpha-1} \prod_{i \neq j} T_i^\alpha - \lambda = 0 \quad (3)$$

$$\partial L/\partial \lambda = K - N - \sum_{i=1}^x T_i = 0. \quad (4)$$

Note that (3) is not a single equation, but is a system of “x” equations. Solving (2) with each of the x (3)’s yields:

$$N = [(1 - \alpha)/\alpha]T_j \quad \forall j, \quad (5)$$

Solving among the (3)’s yields:

$$T_i = T_j \quad \forall i, j. \quad (6)$$

Substituting (5) and (6) into (4) yields:

$$T_j = \alpha K/[1 + \alpha(x - 1)], \quad (7)$$

which is the optimal coverage of a single terrorist incident.

To find how the coverage of an incident changes as the number of terrorist incidents, x, increases, we take:

$$\partial T_j/\partial x = [-\alpha^2 K]/[1 + \alpha(x - 1)]^2. \quad (8)$$

Clearly the numerator is negative and the denominator is positive. Hence, as the number of terrorist incidents increases, the coverage of an individual terrorist incident falls. The second derivative of (7) is:

$$\partial^2 T_j/\partial x^2 = \{(\alpha^2 K)2\alpha[1 + \alpha(x - 1)]\}/[1 + \alpha(x - 1)]^4, \quad (9)$$

which is positive. So the single incident coverage function is convex in incidents.

The total coverage is found by multiplying the single incident coverage by the number of incidents, consistent with (7):

$$T = x\alpha K/[1 + \alpha(x - 1)]. \quad (10)$$

As the number of incidents rises, total coverage of incidents rises by:

$$\partial T/\partial x = [\alpha K(1 - \alpha)]/[1 + \alpha(x - 1)]^2. \quad (11)$$

The second derivative of total coverage is:

$$\partial^2 T/\partial x^2 = \{-2\alpha K(1 - \alpha)[1 + \alpha(x - 1)]\}/[1 + \alpha(x - 1)]^4. \quad (12)$$

For $0 < \alpha < 1$ and $x \geq 1$, (12) is negative, hence the total coverage is concave in incidents.

Stage 2: the Terrorist's Choice

We formulate the terrorists' choice problem as a common property conflict. The general common property model has a long history, and is concisely presented in Cornes and Sandler (1996, pp. 276–282). We wish to show that when one terrorist perpetrates another incident that this induces another terrorist to perpetrate fewer incidents, since both are competing for a common pool of public interest. We have called this the “media congestion effect.” Thus far, we have shown that when another incident is perpetrated, that the media coverage per incident falls. We now demonstrate that the choices that the terrorist will make in equilibrium do display the media congestion effect.

In our formulation, we will assume that the payoff to terrorist incidents is coverage. Before we begin, we must partition the “ x ” terrorist incidents by the groups that commit them. Terrorist group “ g ” commits x_g incidents. There are “ G ” terrorist groups, hence:

$$\sum_{g=1}^G x_g = x. \quad (13)$$

Using (7), the total coverage that terrorist g receives from committing x_g incidents is:

$$T_g = x_g(\alpha K)/[1 + \alpha(x - 1)]^2. \quad (14)$$

We assume that coverage and the cost of incidents (c) may be expressed in the same units in finding the net benefit to the terrorist of perpetrating incidents:

$$\Pi_g = x_g(\alpha K)/[1 + \alpha(x - 1)]^2 - cx_g. \quad (15)$$

To maximize the terrorist's net benefit of committing an incident, we solve. $\partial\Pi_g/\partial x_g = 0$.

Before taking the partial derivative, we note that the other terrorist groups' choices of incidents are beyond terrorist group g 's control. We denote the number of incidents committed by terrorist groups other than “ g ” as $x_{g'}$, such that:

$$x_{g'} = \sum_{n \neq g} x_n. \quad (16)$$

Hence, $x_{g'}$ is a parameter from group g 's perspective and,

$$x = x_g + x_{g'}. \quad (17)$$

Hence, our maximization problem becomes:

$$\partial \prod_g / \partial x_g = \partial \left\{ \left\{ x_g \alpha K / [1 + \alpha(x_g + x_{g'} - 1)]^2 \right\} - c x_g \right\} / \partial x_g = 0. \quad (18)$$

There are two solutions to (18), derived with the help of the quadratic formula. Neither solution has imaginary elements, but one solution is globally negative, given our assumptions that K , c , and α are positive. We discard the globally negative solution. The following solution is *not* globally negative:

$$x_g^* = - \left\{ c(\alpha x_{g'} - \alpha + 1) - [c\alpha(1 + \alpha x_{g'} - \alpha)]^{1/2} \right\} / c\alpha. \quad (19)$$

This solution is positive for:

$$K/c + 1 - 1/\alpha > x_{g'}. \quad (20)$$

Simultaneous solutions of each group's reaction function, (19), constitutes a Nash equilibrium. Our focus, however, is showing that $\partial x_g^* / \partial x_{g'} < 0$. In other words, the individual terrorist group's reaction function is downward sloping. An expansion of terrorist incidents by one terrorist would cause another terrorist to choose less incidents.

The slope of (19), the reaction function, is:

$$\partial x_g^* / \partial x_{g'} = \left\{ -2[c\alpha(1 + \alpha x_{g'} - \alpha)]^{1/2} + \alpha K \right\} / \left\{ 2[c\alpha(1 + \alpha K x_{g'} - \alpha)]^{1/2} \right\}. \quad (21)$$

The slope of the reaction function is negative if:

$$x_{g'} > K/4c + 1 - 1/\alpha. \quad (22)$$

Note that wherever the reaction function has the terrorist choosing a positive amount of incidents (20), the reaction function has a negative slope (22). Hence, we have demonstrated the media congestion effect. When terrorist groups choose optimally, they crowd each other out of the pool of media attention.

EMPIRICAL RESULTS

Previous Empirical Research

Most scholarly research on terrorism and the media is not empirical (e.g. Alexander, 1980; Islam and Shahin, 1989; Smythe, 1994). This is understandable, for a few reasons. First of all, measuring media attention is not precise. One must compare and combine front page coverage, top stories of a newscast, general commentaries, stories which entangle multiple incidents (such as the Lebanese kidnappings during the 1980s) and the like, in an effort to be precise about the quantity of media coverage. Second, measuring media coverage is often an exhausting task involving measuring column inches in a newspaper or timing television broadcasts. Finally, like all research on terrorism, in order to collect data one must attempt to enact scholarly definitions and parse which stories fit the definition and which do not.²

Much of the empirical work on terrorism is descriptive. For instance, Crelinsten (1989) analyzes how the term "terrorism" has been applied to conflict since the 1960s, how the quantity of references to terrorism have changed over time, and points out the differences between the media's and the scholar's definitions of terrorism. Delli Carpini and Williams (1987) examine how the media has shaped public perceptions of terrorism and investigate the accuracy of the portrait that the media paints. Delli Carpini and Williams include the competing demands of various stories as one element in their study.

Of the causal work, only Nelson and Scott (1992) attempt (unsuccessfully) to show that the media causes terrorism. Most causal work shows how various aspects of terrorism cause media attention. Nelson and Scott (1992) show how coverage is shaped by terrorism by identifying incident specific characteristics that influence media attention. Similarly, Schaffert (1992) shows that media attention depends on the degree of the terrorist's success in the incident. Though Enders and Sandler (1991 and 1996) do not explicitly analyze the media, their results have implications regarding media attention. Enders and Sandler's

²For instance, a story regarding a bomb that exploded in Israel, but with no known source, is probably, but not certainly, terrorism. An Israeli counterattack into Lebanon in response to a recognized terrorist bombing in Israel is about terrorism. But as an Israeli campaign escalates into war, at some point the news coverage has mostly become about war, and not about terrorism – unless the Israeli incursion is, itself, terrorism under the researcher's definition.

1991 work finds empirical linkages between terrorism and tourism – linkages that do not exist in the absence of media attention. Similarly, Enders and Sandler's 1996 paper finds that terrorism causes decreases in foreign direct investment in Spain and Greece – another linkage which might be strengthened by media attention.

The Data

We constructed our media coverage variable using column-inches in the *New York Times* (NYT).³ Data gatherers physically measured coverage on the individual incidents in a process that took over a year. Our media coverage data is matched to the terrorist incidents in an upgrade of ITERATE 2. The working definition used in the ITERATE data sets is:

... [terrorism is] the use, or threat of use, of anxiety-inducing extra-normal violence for political purposes by any individual or group, whether acting for or in opposition to established governmental authority, when such action is intended to influence the attitudes and behavior of a target group wider than the immediate victims and when, through the nationality or foreign ties of its perpetrators, its location, the nature of its institutional or human victims, or the mechanics of its resolution, its ramifications transcend national boundaries. (Mickolus, Sandler and Murdock, 1989)

ITERATE 2's 107 variables describe attributes of all international terrorist incidents from 1968 through 1977. These descriptors include information on the terrorist attack force, the terrorist incident, the hostages (if any), the outcome of the incident, and the fate of the terrorists that took part in the incident. In the upgrade, ITERATE 2 was supplemented and extended to cover 1968 through 1984 by the U.S. State Department, the Central Intelligence Agency, and the U.S. Justice Department. This is the same upgrade used in Sandler and Scott (1987).

International terrorism, which ITERATE 2 describes, involves combatants, targets, or target audiences from different countries. However, there are sometimes problems in classifying an incident as

³A column-inch is one column wide and one inch long. A page in the *New York Times* is six columns wide.

international or domestic. For instance, a plane may be hijacked by domestic terrorists who threaten to land in a foreign airport, though they never make good on their threat. After the incident, the terrorists might reveal that they never, in truth, intended to land in a foreign airport. However, one might classify the hijacking as international terrorism, though the only foreign interaction was that foreign governments refused to allow the plane to land, though there was no planned landing. One may also find difficulties in classifying a terrorist group as foreign or domestic if they claim a nationality that is no longer recognized as existing. ITERATE includes Basque incidents perpetrated by those who are official Spanish citizens, against Spaniards in Spain, though there is no separate, recognized country of Euskadi (the Basque "homeland").

There are 798 terrorist incidents in the data set. Of these, the dates on which 10 of them occurred are missing; hence, we use the other 788 incidents. We count media coverage that can be linked to a particular incident in the data set; thus, editorials on terrorism are only counted if they can be linked to a particular incident. Space taken by headlines is counted in total column-inches. The most column-inches in a quarter (three month period) is 11,086 (the Iran hostage crisis generated 10,864.5 of these column-inches). The second most column-inches in a quarter is 2,405; hence, the Iran hostage crisis is an outlier which must be accounted for.

The Empirical Model

We wish to test whether coverage of one terrorist incident crowds out the coverage of other terrorist incidents. To perform this test, we construct the following variable. For each incident, "Other coverage" is equal to the amount of coverage of other terrorist incidents that occurred during the quarter. We regress the coverage of an incident (Coverage) on the coverage of other terrorists' incidents (Other Coverage) for the quarter:

$$\text{Coverage} = b_0 + b_1 * \text{Other Coverage} \quad (23)$$

Coverage and Other Coverage are measured by column inches in the *NYT*. If one terrorist's coverage is crowded out by the other terrorists' coverage, the coefficient of Other Coverage, b_1 , will be negative.

As previously indicated, the Iran hostage crisis is an outlier, which we control for with a dummy variable, "Iran," which equals one for all

Table 1 Test of Media Congestion Hypothesis
(Dependent Variable is Inches of Coverage)
(*t*-statistics in parentheses)

Variable	
Constant	76.728 (5.643)
Other Coverage	-0.124 (-10.122)
Iran	2372.431 (14.380)
<i>F</i>	103.408
<i>R</i> ²	0.209

incidents which occurred during the quarter in which the hostage crisis is accounted for.

Our Empirical Results

We report our results in Table 1. Other Coverage's coefficient is negative and significantly different than zero at all traditionally used levels of significance ($t = -10.122$). The coefficient indicates that a terrorist group's coverage falls by -0.124 inches when another terrorist incident's coverage increases by one inch. Hence, we find significant evidence of crowding-out, the central hypothesis of this research. The Iran dummy is positive and significant, as expected.

For testing the null hypothesis that all non-intercept coefficients are zero, the calculated *F*-statistic is 103.408. This leads us to reject the null hypothesis at all of the usually quoted levels of significance, concluding that we have enough evidence to reject the hypothesis that there is no relationship between the dependent and independent variables. *R*² is 0.209, indicating that the model explains about 20% of the variation in coverage of terrorist incidents.

CONCLUSIONS

Terrorists do battle with each other for the attention of the press. One terrorist's gain in media attention is another terrorist's loss; hence there is a natural limit on the media-based returns to terrorist activities. Some argue that the press exacerbates terrorism, but we show

that the media's encouragement of terrorism has a natural limit. The media will not cause an explosion of terrorism due to the public's limited taste for information on terrorism. In order to compete successfully for media attention, terrorists must be original enough to stage incidents that are a departure from past events. Hence, large media returns to terrorism come mostly from the perpetrators' imaginative abilities. In terms of the media's encouragement of terrorism, we needn't fear more terrorists as much as more imaginative terrorists.

Future research might incorporate the heterogeneous nature of the events, examining the conditions under which a few extremely violent events are perpetrated and under which conditions terrorists might mix their event types. In addition, future research could examine whether coverage of terrorism might have some properties of joint consumption. Perhaps events by other terrorists lead to a heightened public awareness of the general form of conflict, allowing terrorists to free ride off of each other's events. This would provide a countervailing force to media congestion. However, given that terrorism has not spiraled out of control, this force might also be counterfactual.

REFERENCES

- Alexander, Y. (1980) Terrorism and the media: some observations. *Terrorism: An International Journal*, 3(3/4), 179-180.
- Atkinson, S., Sandler, T. and Tschirhart, J. (1987) Terrorism in a bargaining framework. *Journal Of Law And Economics*, 30(1), 1-21.
- Chalfont, L. (1980) Political violence and the role of the media: some perspectives - the climate of opinion. *Political Communication And Persuasion: An International Journal*, 1(1), 79-81.
- Conference report of the Second Conference on International Terrorism (1985) Terrorism and the media. *Political Communication And Persuasion: An International Journal*, 3(2), 185-190.
- Cornes, R. and Sandler, T. (1996) *The Theory Of Externalities, Public Goods, And Club Goods* (2nd edition). Cambridge: Cambridge University Press.
- Delli Carpini, M. and Williams, B. (1987) Television and terrorism: patterns of presentation and occurrence, 1969 to 1980. *Western Political Quarterly*, 40(4), 45-64.
- Enders, W. and Sandler, T. (1991) Causality between transnational terrorism and tourism: the case of Spain. *Terrorism*, 14(1), 49-58.
- Enders, W. and Sandler, T. (1996) Terrorism and foreign direct investment in Spain and Greece. *Kyklos*, 49(3), 331-351.

- Islam, M. and Shahin, Q. (1989) Economic methodology applied to political hostage-taking in light of the Iran-Contra affair. *Southern Economic Journal*, 55(4), 1019-1024.
- Kelly, M.J. and Mitchell, T.H. (1981) Transnational terrorism and the western elite press. *Political Communication And Persuasion: An International Journal*, 1(3), 269-296.
- Mickolus, E.F. (1982) *International Terrorism: Attributes of Terrorist Events, 1968-1977 (ITERATE 2)*. Ann Arbor, MI: Inter-University Consortium for Political and Social Research.
- Mickolus, E.F., Sandler, T., Murdock, J. and Fleming, P. (1989) *International Terrorism: Attributes Of Terrorist Events, 1978-1987 (ITERATE 3)*. Dun Loring, VA: Vinyard Software.
- Nelson, P.S. and Scott, J.L. (1992) Terrorism and the media: an empirical analysis. *Defence Economics*, 3(4), 329-340.
- Schaffert, R.W. (1992) *Media coverage and political terrorists: a quantitative analysis*. New York: Praeger Publishers.
- Schmidt, A.P. and de Graaf, J. (1982) *Violence As Communication: Insurgent Terrorism And The Western News Media*. Beverly Hills, California: Sage.
- Smythe, D. (1994) The spiral of terror and the mass media. In *Counterclockwise: Perspectives On Communication And In The Cultural Industries*, edited by T. Guback. Boulder, Colorado and Oxford: Westview Press, 129-149.