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Can News Draw Blood? The Impact of Media Coverage on the Number and Severity of Terror Attacks

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Abstract

Using a new data set that captures the share of reporting on terrorism, we explore the nexus between terrorist attacks and the news. It turns out that terrorism mainly influences news reports through the number of incidents. Regarding the reverse causality, we provide evidence that the share of the news devoted to terrorism Granger-causes further terrorist activities. However, short-run and medium-run effects differ: media coverage on terror has no short-run impact on the number of terror attacks (two months), while it affects the severity of terror for up to ten months. These observations are consistent with the idea of competition between terrorist groups.
Keywords: terrorism, media, news reporting.
JEL codes: D74, B25.

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1 Introduction

The hypothesis that terrorist attacks lead up to news coverage cannot surprise anyone. On second thought, one might even wonder whether at some point habituation effects kick in, as in a world plagued with terrorism new attacks are hardly news unless they strike close at home and (or) exceed the customary level of violence. The reverse causality, however, appears much more interesting and politically relevant: Is there a feedback mechanism through which news reporting induces additional terrorism?

There exists a small theoretical literature on the latter issue, in particular Frey and Rohner (2007) and Pfeiffer (2012b). This strand of literature typically focusses on the *share* of news reporting devoted to terrorism. The reason is that the models view optimising networks and newspapers as being constrained by a given volume of news broadcasts or a maximum number of pages available in a daily publication. We believe this constraint to be a plausible one, which merits further study, in particular in an empirical manner.

Over the past two decades, a rich literature has emerged dealing with both the economic modelling, and the econometric estimation, of terrorism.[1] The pertinent empirical literature using newsfeeds,[2] however, typically relies on the number of Google searches (Pfeiffer, 2012a), the number of articles in a newspaper (Jetter, 2014) and other *absolute* measures of news coverage. The present paper differs from the existing literature in that it exploits a new dataset allowing for a reliable measure of *relative* coverage. We also add to the existing literature in that we focus on television reports rather than the Internet or newspapers, using a selection of media from three Western countries. Finally, by aggregating time series at a weekly and monthly level, we use a finer granularity than Pfeiffer (2012a) while still dealing primarily with the overall media attention to terrorism instead of the effects of individual news items.

We begin with a short dynamic model that introduces a feedback loop from news reports to terrorist activity, broadly construed (section 2). Section 3 describes our new data set, and section 4 presents our estimation strategy and results. Section 5 concludes.

[1] The standard handbooks in the discipline provide surveys (for example, see Garfinkel and Skaperdas, 2012). Recent results stress the heterogeneity of terrorism (Kis-Katos et al., 2011).

[2] There is a large theoretical and empirical literature that analyses the impact of the media and of media bias on decision-making by economic actors (typical papers include Baron, 2005; Gentzkow et al., 2011). A growing number of papers also use data from Media Tenor (for recent contributions, see Garz, 2014; Lamla and Dräger, 2013, and refer to the short discussion in section 3). However, this literature typically focuses on the impact of media coverage on voting behaviour and macroeconomic variables rather than reports on terrorism and thus we will not survey it here.

2 A simple model

Our model of the interaction between the media and terrorist groups is similar in spirit to Frey and Rohner (2007) and Pfeiffer (2012b). However, their models are static – although Frey and Rohner (2007) consider a dynamic extension in the appendix – and formulated in terms of controls rather than states. We also explicitly introduce a third sector, namely sponsors of terrorism, to motivate our hypothesis that there exists a feedback loop between the *share* of media capacity devoted to terrorism and terrorist activity. On the other hand, the model remains *ad hoc* as we specify the behaviour of agents in our model parametrically rather than derive it from optimisation. To do the latter, one would need to solve a differential game between terrorists (and the media sector) that contains non-linearities. Beckmann and Reimer (2014) review the theoretical problems this entails and the consequent limitations for formal conflict economics.

The model contains three state variables, viz. the resources r_t available to the terrorist group, the public attention a_t for terrorism and for other news items (b_t). Suppressing time indices, the latter two are supposed to change over time according to the following linear differential equations:

$$\dot{a} = \frac{\epsilon s r}{p} - \delta_1 a \tag{1}$$

$$\dot{b} = \tilde{n} - \delta_2 b \tag{2}$$

In equation (1), s represents the share of available resources that terrorist groups devote to carrying out attacks, p are the costs of a single attack, and ϵ measures the effectiveness of terrorist attacks, e.g. the average number of casualties per attack.

The public interest in a news item wanes as time goes by. We capture this by including depreciation of a and b at the rates δ_1 and δ_2, respectively. "Other" news is assumed to arrive at a random rate $\tilde{n}$; in numerical simulation, we typically assume this to be uniformly distributed over some range $[0, n_{\max}]$.

$$\dot{r} = \frac{aw}{a+b} - \delta_3 r - sr \tag{3}$$

The terrorist sector receives funding from sponsoring nations, groups and individuals, whose willingness to pay depends on the parameter w and the *share* of reporting on terrorist events in the media (Pfeiffer, 2012b). The fraction $\frac{a}{a+b}$ represents the familiar ratio conflict success function (Hirshleifer, 2001), where the scale parameter has been set to unity. Terrorist resources can be spent on attacks (sr) or saved, in which case they depreciate at a rate δ_3. This assumption reflects the hypothesis that terrorist groups find it difficult to put their capital to productive use in the official economy, and that some resources will be destroyed by anti-terror efforts.

There is no stationary state proper in this model due to the random stream of general news $\tilde{n}$. However, if n were a constant and equal to its expectation, a stationary state could be computed. Letting $\dot{a} = \dot{b} = \dot{r} = 0$, two solutions to our system of equations can be obtained. The first one is a corner solution where both the number of attacks and the terrorist resources are zero, and the second one is

$$a^* = \frac{\epsilon s w}{\delta_1 p(\delta_3 + s)} - \frac{\mathrm{E}\tilde{n}}{\delta_2} \tag{4}$$

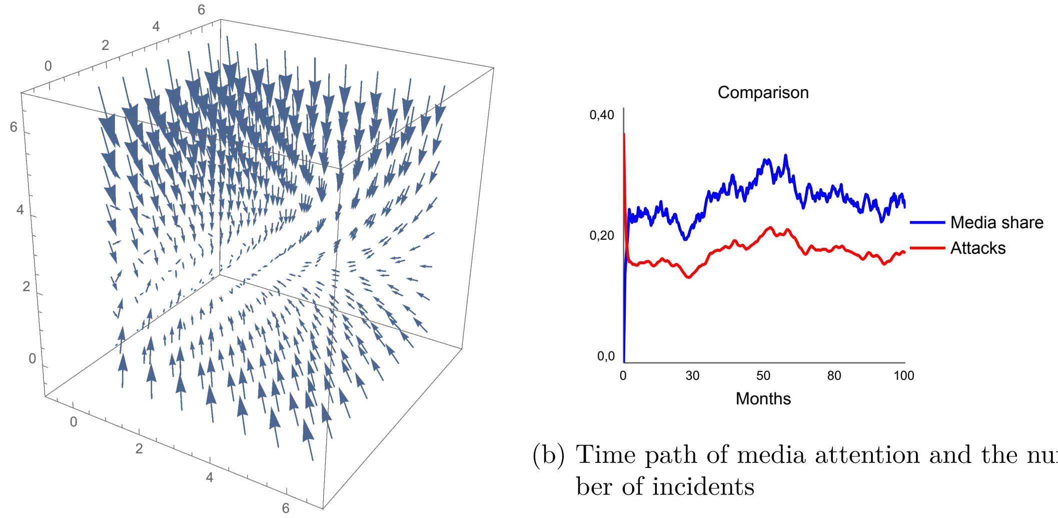
$$b^* = \frac{\mathrm{E}\tilde{n}}{\delta_2} \tag{5}$$

$$r^* = \frac{w}{s + \delta_3} - \frac{\delta_1 p \mathrm{E}\tilde{n}}{\delta_2 \epsilon s} \tag{6}$$

Besides imposing obvious restrictions on the values of our parameters required to ensure that the stationary state lies in the positive orthant, these results do not offer any surprises. In order to determine the stability properties of the system, we compute its Jacobian

$$\mathcal{J} = \begin{pmatrix} -\delta_1 & 0 & \frac{\epsilon s}{p} \\ 0 & -\delta_2 & 0 \\ \frac{bw}{(a+b)^2} & -\frac{aw}{(a+b)^2} & -\delta_3 - s \end{pmatrix} \tag{7}$$

and find its eigenvalues to be $\lambda_1 = -\delta_2$, $\lambda_2 = \frac{\sqrt{A^2+4b\epsilon sw}-(a+b)\sqrt{p}(\delta_3+s+\delta_1)}{2(a+b)\sqrt{p}}$ and $\lambda_3 = \frac{-\sqrt{A^2+4b\epsilon sw}-(a+b)\sqrt{p}(\delta_3+s+\delta_1)}{2(a+b)\sqrt{p}}$, where A is the expression $A = (a+b)\sqrt{p}(\delta_3 + s - \delta_1)$. As $A^2 + 4b\epsilon w > 0$, all three eigenvalues will be elements of the real line. Furthermore, it is obvious that $\lambda_1 < 0$ and $\lambda_3 < 0$. The sign of λ_4 is indeterminate, although numerical experimentation shows that it is positive only for small values of a and b. Consequently, the stationary point – if it exists at all in the positive orthant –, is either asymptotically



(a) Vector field

(b) Time path of media attention and the number of incidents

Figure 1: An example simulation of the theoretical model

stable or saddle point stable, with the former case being more likely. Figure 1 on page 5 presents a representative simulation run of the model.[3]

As the simulated time series in figure 1 illustrates, the model predicts terrorist acts and their share of reporting to move together. All three stocks are endogenous, in particular, there is a causal link from terrorism to media reports as well as the reverse causality. We therefore state the following two hypotheses:

Hypothesis 1 *Terrorist activity Granger-causes the proportion of media reports devoted to terrorism.*

Hypothesis 2 *The intensity of reporting in the media Granger-causes the volume of terrorist activity.*

[3]The specific values chosen for this example are: $\delta_1 = \delta_2 = \delta_3 = \frac{1}{5}$, $w = 3$, $s = \frac{3}{5}$, $p = 1$, and $\epsilon = \frac{3}{10}$. $\tilde{n}$ is assumed to be uniformly distributed over the unit interval.

3 Data

The present study draws on two different data sources: Data on terrorist incidents are taken from the Global Terrorism Database (GTD) (START, n.d.), which has become a staple of the empirical literature on the economics of terrorism (see, for example Kis-Katos et al., 2011). GTD captures a variety of information for incidents (if available), including – but not limited to – date, geographical location, perpetrators, targets, weapons and methods used, number of victims killed and wounded, and an estimate of material damage (for more on GTD, see LaFree et al., 2015). From this data, we construct separate time series containing the total number of incidents per day and the total number of casualties and fatalities for international, domestic and all terrorism, respectively.[4] The models presented in the results section (4) use the number of fatalities to measure the severity of attacks. We ran the main models using all casualties as an alternative measure of severity, but found no qualitative difference. We therefore omit the number of wounded victims from our estimations.

Existing contributions on the impact of media coverage on perceptions and behaviour in a political and economic context often use data from various media outlets in a certain country.[5] When it comes to the global impact of the media on perception and behaviour, however, the international reach and accessibility of the media play an important role. Because TV newshows have the highest reach inside a country and are broadcast internationally by satellite and the internet, Helmenstein et al. (2016) use media coverage on Austria in 21 international TV newsshows as a proxy for the international perception of Austria as a business location to analyse investment activities. TV data also allows to look at the domestic perception of international events, especially when pictures play an important role. In this vein, Eisensee and Strömberg (2007) use data of four major U. S. TV networks to estimate the impact of media coverage on natural catastrophes on U.S. disaster relief.

For the purposes of the present paper, it therefore seems reasonable to use media which

[4]The GTD database contains variables designed to capture various aspects of internationalness. We consider an incident to be "international" if it fulfills *all* of these criteria. In addition, we also compiled a list of terrorist organisations that (a) are responsible for more than 25 incidents over the period of consideration (2001-2014) and (b) appear to operate across national borders according to their description in the media. Using this second delineation failed to make a difference for our results.

[5]For example, Dewenter et al. (2016) analyse how media coverage on the automotive industry affects the number of car sales in Germany on the basis of seven German TV newscasts, nine newspaper, and five magazines. A similar approach is used by Garz (2012, 2013), who finds evidence for the impact of media coverage in Germany on the job insecurity perceptions of the German citizens.

have internationally and domestically the best accessibility and the highest reach. Additionally, pictures play an important role when it comes to the news coverage of terrorism (in much the same way that they do for natural catastrophes). And, finally, the existing literature on the media impact of terrorism underutilises TV data.

The media side of our data set is based on media content analysis by Media Tenor International.[6] *All* news items broadcast by selected television programmes in three countries[7] were captured and *analysed* by human experts. As computer linguistic approaches are still not be able to produce reliable results when it comes to content and sentiment analysis in the political context even in the analysis of printed texts (see Grinner and Steward (2013) the analysis of TV newsshow is simply not possible from a technical perspective so far.

In total 1,797,181 news items from nine TV news broadcasts were processed to generate our data set. Available variables include date, source country, name of medium, style of the item, category of main topic, main topic, main actor referenced, region or country referenced, and an evaluation. *News items* are standardized pieces of information provided by a media report. For example, if one terrorist incident is covered, each time the protagonist, such as the terrorist or the victims, or the source, such as the anchorperson or terror expert or a politician, changes, this will be added as a separate item on the same incident. As we know the number and type of all news items broadcast in every single TV broadcast, we are in a position to construct a fair measure of the share of reporting an incident receives.

Note that this measure is content-based rather than time-based: it does not reflect the share of broadcasting time devoted to terrorism, but rather the share of different perspectives and content as evaluated by a human researcher.

[6]Media Tenor International is a globally operating Swiss-based media analysis institute. Media Tenor employs more than 100 professional analysts to carry out media analyses. Only analysts that achieved a minimum reliability of 0.85 are cleared for coding – i.e., the coding of these analysts in training must not deviate at most by 0.15 from the trainers' versions. The reliability of the coding is checked on an ongoing basis, both with quarterly standard tests and random spot checks. For each month and analyst, three analysed reports are selected randomly and checked. Analysts scoring lower than 0.80 are removed from the coding process. In none of the months did the mean deviation among all coders exceed 0.15.

[7]These are: Tagesschau, Tagesthemen, heute and heute journal (Germany); BBC (Newsnight) and Ten o'Clock News on BBC 1 (UK); CBS Evening News, FOX Special Report w/Bret Baier, and NBC Nightly News (USA).

The four panels in figure 2 on page 8 trace key variables in our data set over time. The top left panel (2a) shows the share of news items, *newsshare*, on terrorism. We immediately see the outlier that was 9/11 and to a lesser degree the attack on the Boston Marathon in 2013, but we also recognise that the portion of news broadcasts devoted to terrorism is fairly low (below 1 %) on most days. At the top right, we show (panel 2b) the time series of *incidents* and victims killed (*kills*) over time. Again, 9/11 stands out, but the second outlier in the number of fatalities time series, however, reflects ISIS activities in Tikrit, Badush und Sinjar. We also find some indication that terrorist incidents have grown deadlier over time.

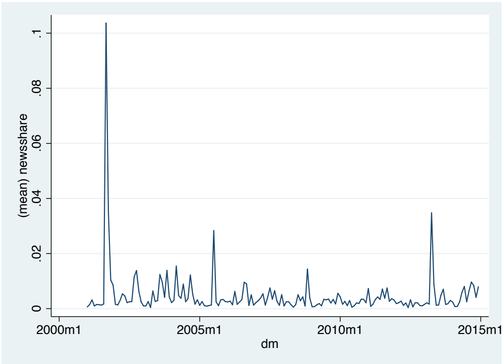
On the bottom row of figure 2 on page 8, the left-hand panel shows the time series of the number of items reported on all our media channels, while the right panel (2d) plots the number of terrorist acts classified as international by the GTD over time. It is apparent that international terrorism is on the rise in absolute terms, and a visual comparison to panel (2b) suggests that this form of terrorism has also become more prevalent in relative terms. But note the scale on the y axis: Regarding the number of incidents, *localised terrorism still dwarves the international variant.*

4 Results

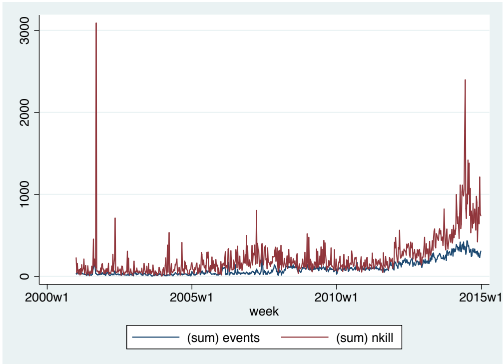
To analyse the implications of the theoretical model, we aggregate our time series on a *weekly* basis, pooling international and regional terrorism. At a first step, we run Phillips-Perron unit root tests on *incidents*, *kills* and *newsshare* in order to determine possible nonstationarities (see Table 1 below).[8] Overall, all variables are found to be I(0). The same finding obtains if we shorten our time series by dropping the years 2001 and 2013 in order to eliminate the two major outliers identified in section 3.

Next, we tackle hypothesis 1, running Granger causality test using *incidents* and fatalities on the one and *newsshare* on the other hand. Although Bayesian as well as Akaike information criteria suggest the use of six lags, we also include up to a dozen lags in our regressions. By these means, we are able to cover as much a quarter. As can be seen from table 2, the number of incidents Granger cause the newsshare using up to 12 lags (i.e., weeks). The expected short-run effect through the frequency of attacks channel

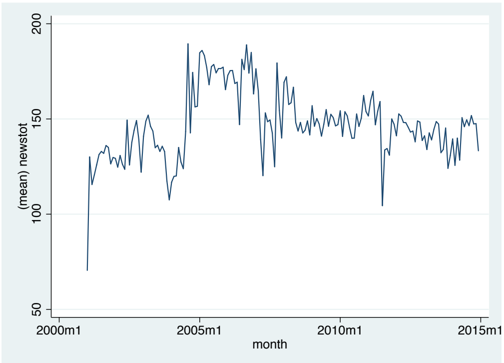
[8]Tests are conducted using levels of *newsshare* and levels as well as logs of *incidents* and *kills* using only a constant term in the underlying regressions. We additionally ran unit root tests for *incidents* and *kills* including a deterministic trend.



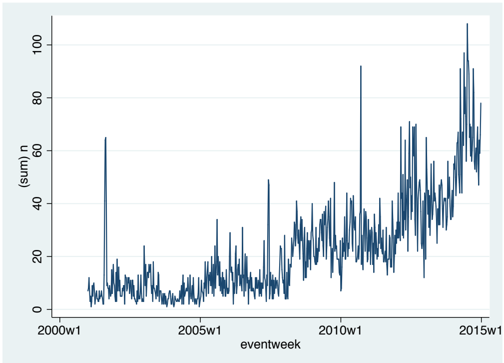
(a) The share of news devoted to terrorism



(b) Terrorist events and victims killed



(c) Number of items



(d) International terrorist events

Figure 2: Plots of selected time series from our data set

Table 1: Philips-Perron unit root tests (H_0: no stationarity)

Variable	Model	# lags	Z(t)	p-value
incidents	constant	6	-2.503	0.11
incidents	constant & trend	6	-6.577	0.00
kills	constant	6	-4.575	0.00
kills	constant & trend	6	-13.056	0.00
newsshare	constant	6	-22.558	0.00
newsshare	constant & trend	6	-22.637	0.00

can therefore be regarded as established.[9] However, using the number of kills instead of the number of incidents apparently leads to a quite different result: the null that the number of kills do not Granger cause coverage on terrorism can not be rejected in any case. Taking logs of the number of incidents and fatalities to reflect that our left-hand variable is a proportion leads to similar results.

Table 2: Granger causality tests of terrorism causing media reporting (weekly data, 2001 – 2013)

H_0	# of lags	χ^2-statistics	Prob > χ^2
incidents $\nrightarrow$ newsshare	1	0.63	0.42
incidents $\nrightarrow$ newsshare	2	6.45	0.04
incidents $\nrightarrow$ newsshare	3	10.12	0.02
incidents $\nrightarrow$ newsshare	4	10.53	0.03
incidents $\nrightarrow$ newsshare	5	10.87	0.05
incidents $\nrightarrow$ newsshare	6	11.84	0.06
incidents $\nrightarrow$ newsshare	7	17.82	0.01
incidents $\nrightarrow$ newsshare	8	18.22	0.02
incidents $\nrightarrow$ newsshare	9	18.70	0.03
incidents $\nrightarrow$ newsshare	10	19.05	0.04
incidents $\nrightarrow$ newsshare	11	19.73	0.05
incidents $\nrightarrow$ newsshare	12	19.96	0.07
kills $\nrightarrow$ newsshare	1	0.97	0.32
kills $\nrightarrow$ newsshare	2	0.96	0.62
kills $\nrightarrow$ newsshare	3	1.90	0.59
kills $\nrightarrow$ newsshare	4	1.91	0.75
kills $\nrightarrow$ newsshare	5	6.41	0.27
kills $\nrightarrow$ newsshare	6	8.02	0.23
kills $\nrightarrow$ newsshare	7	8.45	0.29
kills $\nrightarrow$ newsshare	8	8.33	0.40
kills $\nrightarrow$ newsshare	9	8.36	0.50
kills $\nrightarrow$ newsshare	10	8.54	0.57
kills $\nrightarrow$ newsshare	11	8.80	0.64
kills $\nrightarrow$ newsshare	12	8.95	0.70

However, the second part of this result hinges on the presence of the outliers. Restricting

[9]Interestingly, it seems to take week for the new incidents to have an impact.

our sample to the period of 2002:1 to 2012:52, and therefore excluding terrorist attacks on 9/11 as well as Boston Marathon bombing, we are able to derive different results. Now, both the number of incidents and the number of people killed are found to be Granger-causal to media coverage. This reveals that the extraordinary events led to biased estimates. (See table 3 below. We suppress the unchanged results.)[10]

Table 3: Granger causality tests of terrorism causing media reporting (weekly data, 2002 – 2012)

H_0	# of lags	χ^2-statistics	Prob > χ^2
kills $\nrightarrow$ newsshare	1	5.70	0.02
kills $\nrightarrow$ newsshare	2	5.75	0.06
kills $\nrightarrow$ newsshare	3	8.64	0.03
kills $\nrightarrow$ newsshare	4	8.58	0.07
kills $\nrightarrow$ newsshare	5	8.52	0.12
kills $\nrightarrow$ newsshare	6	8.88	0.18
kills $\nrightarrow$ newsshare	7	14.61	0.04
kills $\nrightarrow$ newsshare	8	15.00	0.06
kills $\nrightarrow$ newsshare	9	16.56	0.06
kills $\nrightarrow$ newsshare	10	15.62	0.11
kills $\nrightarrow$ newsshare	11	17.38	0.10
kills $\nrightarrow$ newsshare	12	19.27	0.08

Let us now turn to the second hypothesis. To test this, we run Granger causality test under the null that newsshare does not Granger cause the number of incidents or number of fatalities, respectively. Table 4 summarizes the results from both tests regarding a rather short-run perspective. Again, even though information criteria suggest six lags (weeks), we admit up to a dozen lags to account for at least a three months period. Interestingly, while the share of reports on terrorist attacks fail as a predictor of the number of incidents, the null that newsshare does not Granger cause the number of kills can be rejected. This finding is consistent with the type of model discussed in section 2, although terrorists appear to compete through the intensity of effort rather than through its quantity. This time, restricting the sample in order to exclude the outliers fails to make a difference, and we do not show the respective table.

As the planning of terrorist acts – depending on the type of attack – may require a considerable amount of time, we now aggregate the data on a monthly basis and rerun

[10] Pfeiffer (2012a) reports a similar result for his dataset of Google queries and newspaper data.

Table 4: Granger causality tests of media reporting causing terrorism (weekly data, 2001 – 2013)

H_0	# of lags	χ^2-statistics	Prob > χ^2
newsshare $\nrightarrow$ incidents	1	0.02	0.87
newsshare $\nrightarrow$ incidents	2	0.27	0.87
newsshare $\nrightarrow$ incidents	3	0.96	0.81
newsshare $\nrightarrow$ incidents	4	2.22	0.69
newsshare $\nrightarrow$ incidents	5	2.78	0.73
newsshare $\nrightarrow$ incidents	6	3.75	0.71
newsshare $\nrightarrow$ incidents	7	4.56	0.71
newsshare $\nrightarrow$ incidents	8	4.77	0.78
newsshare $\nrightarrow$ incidents	9	6.15	0.72
newsshare $\nrightarrow$ incidents	10	6.46	0.77
newsshare $\nrightarrow$ incidents	11	7.10	0.79
newsshare $\nrightarrow$ incidents	12	7.17	0.84
newsshare $\nrightarrow$ kills	1	105.00	0.00
newsshare $\nrightarrow$ kills	2	82.19	0.00
newsshare $\nrightarrow$ kills	3	69.93	0.00
newsshare $\nrightarrow$ kills	4	59.72	0.00
newsshare $\nrightarrow$ kills	5	56.10	0.00
newsshare $\nrightarrow$ kills	6	53.69	0.00
newsshare $\nrightarrow$ kills	7	51.14	0.00
newsshare $\nrightarrow$ kills	8	49.83	0.00
newsshare $\nrightarrow$ kills	9	49.02	0.00
newsshare $\nrightarrow$ kills	10	50.90	0.00
newsshare $\nrightarrow$ kills	11	51.33	0.00
newsshare $\nrightarrow$ kills	12	51.01	0.00

our Granger causality tests. Again, the outliers make a difference. If we use the full sample, we fail to find no long-term effects of terrorism on news reporting. Neither the number of kills nor the number of incidents does Granger-cause media coverage on a monthly basis. This changes if we consider a subsample of 2002 to 2012, neglecting 9/11 and the Boston Marathon Bombing (see table 5).

Table 5: Granger causality tests of terrorism causing media reporting (monthly data, 2001 − 2013)

H_0	# of lags	χ^2-statistics	Prob > χ^2
incidents $\nrightarrow$ newsshare	1	11.65	0.00
incidents $\nrightarrow$ newsshare	2	12.60	0.01
incidents $\nrightarrow$ newsshare	3	11.94	0.01
incidents $\nrightarrow$ newsshare	4	15.77	0.00
incidents $\nrightarrow$ newsshare	5	17.97	0.00
incidents $\nrightarrow$ newsshare	6	20.03	0.00
incidents $\nrightarrow$ newsshare	7	21.02	0.00
incidents $\nrightarrow$ newsshare	8	24.66	0.00
incidents $\nrightarrow$ newsshare	9	28.09	0.006
incidents $\nrightarrow$ newsshare	10	24.08	0.01
incidents $\nrightarrow$ newsshare	11	25.53	0.01
incidents $\nrightarrow$ newsshare	12	33.63	0.01
kills $\nrightarrow$ newsshare	1	6.02	0.01
kills $\nrightarrow$ newsshare	2	6.83	0.03
kills $\nrightarrow$ newsshare	3	7.90	0.04
kills $\nrightarrow$ newsshare	4	8.14	0.09
kills $\nrightarrow$ newsshare	5	8.77	0.12
kills $\nrightarrow$ newsshare	6	9.57	0.14
kills $\nrightarrow$ newsshare	7	11.67	0.11
kills $\nrightarrow$ newsshare	8	19.99	0.01
kills $\nrightarrow$ newsshare	9	21.54	0.01
kills $\nrightarrow$ newsshare	10	18.30	0.05
kills $\nrightarrow$ newsshare	11	17.09	0.11
kills $\nrightarrow$ newsshare	12	17.88	0.12

Table 6 shows our results for the reverse causation. Again, we find that using monthly rather than weekly data does not make much of a difference. While newsshare is found to Granger cause *kills* up to a lag length of ten months, which translates three quarters of a year, the number of incidents, again, shows different results. Relative media coverage is not causal for the number of incidents during the first two months. However, the null can be rejected for lags more than two and less than ten.

Table 6: Granger causality tests of media reporting causing terrorism (monthly data, 2001 – 2013)

H_0	# of lags	χ^2-statistics	Prob > χ^2
newsshare $\nrightarrow$ incidents	1	0.29	0.58
newsshare $\nrightarrow$ incidents	2	2.01	0.36
newsshare $\nrightarrow$ incidents	3	7.66	0.05
newsshare $\nrightarrow$ incidents	4	8.33	0.08
newsshare $\nrightarrow$ incidents	5	9.79	0.08
newsshare $\nrightarrow$ incidents	6	11.30	0.08
newsshare $\nrightarrow$ incidents	7	11.81	0.10
newsshare $\nrightarrow$ incidents	8	13.52	0.09
newsshare $\nrightarrow$ incidents	9	15.10	0.09
newsshare $\nrightarrow$ incidents	10	13.74	0.18
newsshare $\nrightarrow$ incidents	11	12.97	0.29
newsshare $\nrightarrow$ incidents	12	15.11	0.23
newsshare $\nrightarrow$ kills	1	31.07	0.00
newsshare $\nrightarrow$ kills	2	26.51	0.00
newsshare $\nrightarrow$ kills	3	25.33	0.00
newsshare $\nrightarrow$ kills	4	25.68	0.00
newsshare $\nrightarrow$ kills	5	27.51	0.00
newsshare $\nrightarrow$ kills	6	27.16	0.00
newsshare $\nrightarrow$ kills	7	27.94	0.00
newsshare $\nrightarrow$ kills	8	31.01	0.00
newsshare $\nrightarrow$ kills	9	32.90	0.00
newsshare $\nrightarrow$ kills	10	16.30	0.09
newsshare $\nrightarrow$ kills	11	17.05	0.11
newsshare $\nrightarrow$ kills	12	14.63	0.26

We interpret these results as evidence for an impact of media coverage on terrorist activities. We consistently find a "forward" causation from attacks on news reporting using both weekly and monthly aggregation levels. The reverse causality also exists, although media coverage seems to have a delayed effect on terrorist acts. This is plausible as attacks usually require planning and preparation. We also posit that the number of kills is a measure of quality rather than quantity. Therefore mimicking terror acts may result in a higher "quality" of attacks or, put differently, in more violent acts. However, media coverage also seems to have a longer-term "reverse" causal effect. TV reporting Granger causes the number of incidents when the time considered is measured in months rather than weeks. Our evidence thus supports both hypothesis 1 and hypothesis 2, although there are interesting nuances and qualifications.

As a final robustness check, we also consider *regional* effects of terrorism. The previous analysis bunched all forms of terrorism – both regional and international, irrespective of target and origin – together and also used media data from all three countries. Clearly, it is likely that a country's media (and the public) react differently to terrorism affecting the home country (or citizens and interest abroad). One might be particularly wary of our result that the number of fatalities does not cause the share of news reporting.

Unfortunately, GTD contains no information on the nationality of victims with the exception of US citizens. We therefore replicate our first model, using only the number of incidents affecting the USA (either taking place on its territory or being directed at a US target) and the number of US victims. Media data is restricted to the three US channels in our data set. Table 7 below displays the results, confirming that the same pattern holds if we look through a "national lens".

Table 7: Granger causality tests of the number of US victims causing reporting in the US media (weekly data, 2001 – 2013)

H_0	# of lags	χ^2-statistics	Prob > χ^2	$\nrightarrow$	$\nleftarrow$
kills $\nleftrightarrow$ newsshare	1	6.30	0.01	0.91	0.34
kills $\nleftrightarrow$ newsshare	2	5.66	0.06	1.27	0.53
kills $\nleftrightarrow$ newsshare	3	6.84	0.07	1.63	0.65
kills $\nleftrightarrow$ newsshare	4	8.76	0.07	1.95	0.75
kills $\nleftrightarrow$ newsshare	5	9.99	0.08	2.01	0.84
kills $\nleftrightarrow$ newsshare	6	36.40	0.00	2.31	0.88
kills $\nleftrightarrow$ newsshare	7	47.22	0.00	2.50	0.92
kills $\nleftrightarrow$ newsshare	8	43.77	0.00	2.59	0.95
kills $\nleftrightarrow$ newsshare	9	43.42	0.00	2.81	0.97
kills $\nleftrightarrow$ newsshare	10	44.60	0.00	3.34	0.97
kills $\nleftrightarrow$ newsshare	11	44.92	0.00	3.41	0.98
kills $\nleftrightarrow$ newsshare	12	45.90	0.00	7.65	0.81

5 Conclusion

This paper uses a new dataset uniquely containing a measure of the share of television news devoted to terrorism in order to investigate two hypotheses derived from a stylised three-sector dynamic model of terrorism, its financial sponsors, and the media: (a) terror acts cause media coverage and (b) media coverage causes further terrorist acts. It turns out that the empirical evidence confirms both the main theoretical hypotheses, sort of. *News can indeed draw blood*, but there are qualifications.

We do find the expected short-run effect of terrorism on media coverage (hypothesis 1). This is straightforward as terror attacks are of certain news value for the media. The reverse causality implied by the theoretical model seems to be present as well (hypothesis 2). However, we also present evidence that short-run and medium-run mechanisms differ.

In the very short run (two months), media coverage on terror has an impact on the severity, but not on the quantity, of terror attacks. This is plausible because terror attacks need some time to plan and organize, and so terror sponsors can in the short run just "invest" in already planned attacks. On the other hand, the medium run adds another margin of choice in that the number of attacks can also be varied to attract sponsorship. As a result the number of terror incidents increase.

These observations are consistent with an extension of our model that emphasizes competition between terrorist groups (instead of the monolithic terrorist sector we posited earlier).

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