

Media effects on public displays of brutality: The case of Mexico's drug war

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This paper presents preliminary empirical evidence to show that media attention may influence public displays of brutality by Mexican drug cartels. We defined public displays of brutality as the presence of banners paired with corpses or dismembered bodies at unconcealed crime scenes. Using a data set of 857 such instances, we estimated reaction functions to determine whether public displays of brutality became more frequent when drug cartel violence was covered more by the press. Our estimates show that public displays of brutality increase in a statistically significant way during the month following media coverage of similar crimes. We attribute this effect to changes in criminal strategy: increased brutality may be a way for criminals to more effectively deliver intimidating messages to their enemies. Whether increased displays of brutality also amount to increased crime rates, rather than merely increased visibility, is a question that remains to be studied.

In the pioneering works of Dussich (1970) and Green & Bynum (1982), and in recent literature such as Savage & Yancey (2008), Doley et al. (2013), Surette (2013) and Nix & Pickett, (2017), media coverage has been found to influence many aspects of criminality and the justice system.

For example, media coverage directly influences individuals' attitudes about potential criminals (Mancini & Shields, 2014), fear of crime (Kort-Butler & Hartshorn, 2011), and the propensity to report a crime (Estrada, 2001). It also affects policing by inducing profiling (Graziano, Schuckm & Martin, 2010), by changing perceptions about preferential treatment by the police (Dowler & Zawilski, 2007), and by influencing attitudes and beliefs about the effectiveness of the police (Donovan & Klahm IV, 2015). Moreover, media coverage seems to play a critical role in the justice system by changing expectations about the quality of crime scene investigations (Huey, 2010), the decision-making process of judges (Hawkins & Scherr, 2017), preferences about criminal sentencing (Rosenberger & Callanan, 2011), beliefs about capital punishment (Lin & Phillips, 2014), and even the probability that some criminals will be convicted (Leal et al., 2015).

Our paper contributes to this literature by exploring the relationship between media coverage and criminal behavior. Specifically, we examine the conditions under which the media may influence the probability that Mexican drug cartels will publicly display brutality. In this way, our research also provides critical insights into the complicated relationship between freedom of the press and national security, prompting future scholarship to grapple in more depth with the trade-offs evident between these two desirable democratic principles.

Our results are based on a panel vector auto-regression model. Using this method, we found that the relationship between public displays of brutality and media coverage is bidirectional, but also that media coverage has a stronger effect on public displays of brutality. We show that public displays of brutality increase in a statistically significant way when similar crimes have been covered in the previous month. We interpret these results to mean that publicity-seeking criminals may be more brazenly brutal if they expect that doing so ensures them a broader media platform to spread their messages. To be clear, our results do not show that they commit more acts of brutality, only that they display them more.

The rest of this paper is organized into four sections. The first section discusses the relevant literature in greater detail. The second section presents our dataset and empirical specifications. The third section explores and discusses our results, and then we conclude with the fourth section.

1. Public displays of brutality in the criminal world

It is well documented that Mexican drug traffickers use public banners, also known as "narco-messages", to take credit for their crimes or to clarify their degree of responsibility for them (Campbell & Hansen, 2014; Durán-Martínez, 2015; Mendoza Rockwell, 2016; Atuesta, 2017; Phillips & Rios 2018). Narco-messages come in the form of flyers, signage, and even graffiti (Salopek 2011). They are used to express territorial control, intimidate rival gangs and policemen, or just to communicate with citizens about their activities (Martin, 2012; Rios, 2013). Public displays range from innocuous banners, such as "Long live the Juarez cartel, Culiacan Sinaloa is our territory" (El Sol de Cuernavaca 2010), to cruel displays of brutality featuring dismembered bodies holding banners reading "this [will] happen to those who dare to invade this place" (Huerta, 2010).

Criminal messaging is also common in terrorism (e.g. Schmid & De Graaf (1982)). Some evidence shows that terrorists time their attacks so that they will be well-covered (Schmid, 1989), run newspapers, radio stations, and websites (Hoffman et al., 2013), and are generally more motivated to act in areas where the press is at liberty to cover them (Eubank & Weinberg, 1994; Drakos & Gofas, 2006; Piazza, 2008).

The literature on terrorism has extensively researched why terrorist groups publicly take credit for their violent actions. According to this literature, the act of publicly displaying a crime is more probable when criminal groups want to signal that they are more capable than rival criminal groups and law enforcement (Dolnik, 2003; Lantz, 2016), or want to communicate the strength and power of their organization (Gambetta, 2009; Wright, 2009). This means that reputation building is one of the most significant determinants of credit-taking (Crenshaw, 1985; Bloom, 2005; Siqueira, 2005; Mendoza Rockwell, 2016; Brown, 2017). Another key finding is that competition among criminal groups makes credit-taking thrive (Hoffman, 2010; Kearns et al., 2014; Durán-Martínez, 2015; Phillips & Ríos 2018) and encourages the use of more “shocking” crimes (Conrad & Greene, 2015).

The institutional environment is also an important determinant. Democracies (Min, 2013) with stronger enforcement powers (Hoffman, 1997) that also refrain from endorsing criminal or terrorist organizations (Benjamin, 2001) see much less credit-taking. Lastly, studies of the Taliban (Abrahms et al., 2017) have shown that credit-taking happens less when citizens are targeted because indiscriminate violence may undermine the organization’s political goals (Abrahms & Conrad, 2017). In sum, research on terrorism has shown that reputation building, competition among criminal groups, and the institutional environment are the most critical determinants of credit-taking.

Given the consistency of these results in the literature on terrorism, it is reasonable to suppose that those three determinants will also be important to understanding the behavior of Mexican drug cartels. However, unlike similar past studies, we explicitly examine the relationship between the media and public displays of brutality.

Intuitively, it is easy to see how official mass media broadcasts could help cartels build their reputations and compete more effectively with their rivals. Thus, it makes sense that media coverage of narco-messages has detonated a large public debate. The media has long been harshly criticized for indirectly “promoting” drug cartels and their violent crimes (Martin, 2012). Indeed, critics typically argue that media coverage of criminal messaging enhances the power of drug cartels by allowing them to spread fear and communicate with their enemies (Reyes, 2011).

As a testament to the extent of public concern, during March of 2011 Mexico's Ministry of Governance proposed the “Agreement on Media Coverage of Violence”. This pact was signed by 700 media outlets in Mexico who agreed to reduce coverage of crime perpetrated by drug trafficking organizations in hopes of thereby reducing cartel-related homicide rates (Philip and Berruecos, 2012). The agreement was cheered by some, but many other people had serious misgivings. Some citizens worried about the implications that regulating coverage had for freedom of the press in Mexico, and they argued that being deprived of information about the criminal activities in their neighborhoods violated principles of democratic governance, such as having an informed electorate.

Similar cases have occurred in other developing countries. During the nineties, for example, the Colombian government convinced 27 top communication outlets to sign the "Discretion Agreement" and to reduce the coverage of violent paramilitary groups by appealing to the potential

for violence reduction (El Tiempo 1999). Additionally, in 2010, Zimbabwe's government attempted to regulate international news outlets and prevent negative media portrayals that might encourage violent uprisings against it (Surette & Gardiner-Bess, 2013).

Academia has recently taken notice of this public debate and considers testing the assumption that media coverage influences the decisions of criminals to be one of the most challenging frontiers in social science (Abrahms & Conrad, 2017; Surette, 2013). The difficulty for researchers arises from the need to determine whether the relationship between media coverage and public displays of brutality could be bidirectional.

On one hand, public displays of brutality could influence media coverage because the media's decision about what to publish rarely responds to a 'normative consensus'. Instead, it typically responds to what reporters and editors feel is 'newsworthy' (Nacos, 2002; Hoffman et al., 2013; Fink, 2014; Coddington, 2014). As Reiner's (2007) pioneering research on the topic explained, crime reporters tend to develop a symbiotic relationship with the contacts and organizations they regularly cover. In the case of Mexico's drug traffickers, for example, ghastly crimes such as beheadings, midday killings near a kindergarten, and crucifixions have resulted in newspapers and TV newscasts filled with increasingly shocking images and grim headlines.

On the other hand, media coverage could influence public displays of brutality because criminals sometimes seek to advance their objectives by claiming credit for crimes that were strategically designed to draw attention and to be fear-inducing, like terrorist attacks (Martin, 1985; Hoffman et al., 2013; Asal & Hoffman, 2016). Criminal organizations and gangs use publicity to build a reputation for being powerful, a critical requirement of success in an industry lacking full information and formal contract enforcements (Lantz, 2016; Durán-Martínez, 2015). When criminal groups have a fearsome reputation, citizens are more vulnerable to extortion and local authorities are more prone to corruption. Also, it deters the emergence of rival criminal groups, reduces desertion and disloyalty within the organization, and generates a sentiment of pride or belonging for organization members.

The reputation of criminals is further enhanced by media coverage because there is a positive and significant relationship between media consumption and citizens' perceptions of security. Media coverage of terrorist attacks, for example, has been found to amplify terrorist activities beyond their true magnitude, strongly affecting how fearful citizens are (Guetti, 2007). In other words, overrepresentation of horrific or criminal incidents can change people's perception, leading them to overestimate the frequency of crime and the danger that criminals pose to them (Heath & Gilbert, 1996).¹

The media may also encourage more instances of criminal activity by normalizing violence and by providing ideas to potential criminal copycats (Surette, 2014). By the time the average child reaches age 18, it has been estimated that she or he would have been exposed to “some 18,000 murders and countless highly detailed incidents of robbery, arson, bombings, shooting, beatings, forgery, smuggling and torture (Sasson, 1995)”. Arguably, crime becomes easier to perpetrate when, because of such exposure, it is not regarded as absolutely deviant conduct. Observing crimes has also been shown to prime individuals to have more aggressive thoughts and to exhibit more hostility (Surette,

¹ It is interesting to note that, just as this literature would expect, there is less of an impact on those that trust the media less (Surette 2013, boda2011media).

2013; Ivory, 2013; Ferguson, 2015). Indeed, well-known research has demonstrated that real crimes are sometimes copied after they have been depicted in the media (Gunter, 2008). This effect may be particularly strong for predisposed individuals that might personally relate to the criminals portrayed in the media (Huesmann, 1986; Huesmann et al., 2003; Huesmann & Taylor, 2006).

Finally, press coverage could also influence the ways in which groups design their attacks (Crenshaw, 1985) because terrorists understand that the media can potentially help them reach wider audiences (Weimann, 2005; Martin 2008) and mediate their communications (Iqbal, 2015). Indeed, terrorists' manipulation and exploitation of the media is a critical part of their propaganda strategy (Schmid & De Graaf, 1982; Wilkinson, 1997). When the international press covers domestic terrorists, for example, they are less likely to launch cross-border attacks (Asal & Hoffman, 2016), and when press attention increases, attacks may become up to twice as likely (Hoffman et al., 2013).

The preponderance of the evidence above supports our theory: that there could be a bidirectional relationship between the media and brutality. This research is important because it concerns drug cartels whose activities are conducted at US-Mexico border, and the security implications will be enduring and significant for both countries. Criminals may respond to media coverage by claiming credit for increasingly depraved crimes, and the media may respond to this by increasing the coverage of these kinds of crimes. The nature and strength of the relationship between these two variables has yet to be empirically examined. The contribution of this paper is to fill that gap, in the next two sections we will describe our data and the empirical strategy that enabled us to do so.

2. Research Design

We chose Mexico as our case study. We did so because addressing whether there may be a direct relationship between media coverage and criminal behavior in Mexico would greatly assist in the development of better strategies to curb criminal activities along the US-Mexico border. Another reason was that studying the public displays of brutality used by Mexican drug cartels allows us to understand credit-taking with sub-national diversity, an accomplishment only sometimes achieved by quantitative credit-taking research (e.g. Hoffman, 2010).

Furthermore, drug cartels are a fascinating case because of their unique hybrid nature. They share the most important features of terrorist organizations (Brito & Intriligator, 1992; Campbell, 2014; Campbell & Hansen, 2014; Phillips, 2018) and of regular criminals (Rios 2014, 2015; Shirk & Wallman, 2015; Holland & Rios, 2017).² This combination makes them ideal subjects for scholars wishing to speak to both the criminology and terrorist literatures.³

² Drug cartel organizations, like terrorist groups, perform criminal activities for operational purposes (McCaffrey & Basso, 2002; Makarenko, 2004; Björnehed, 2004) and use terror as part of their regular activities (Brito & Intriligator, 1992; Phillips 2018). More specifically, Mexican drug cartels share at least three features with terrorist organizations: (1) they use violence to vie for regional political control, (2) violence is ordered by cartel leaders rather than spontaneously done by foot soldiers, and (3) violence is used as an “expansion strategy”, opening the possibility of engaging in other crimes (Campbell, 2014; Campbell & Hansen, 2014). As a result, the State Department has placed Mexican drug cartels on the list of Foreign Terrorist Organizations (Campbell & Hansen, 2014).

³ Our research is relevant for two additional reasons. First, we focus on the study of actual violence, as opposed to fictional violent content in entertainment such as videogames. Many studies have focused on fictional portrayals of violence (e.g. Ferguson et al., 2008), or on testing for changes in tendencies toward aggression (e.g. Ferguson & Dyck, 2012), but few have systematically explored non-fictional violence (Surette, 2013). Second, we study violent behavior instead of aggression. Criminal justice scholars are generally interested in violent behavior that transcends normal aggression and causes illegal physical harm (Savage & Yancey, 2008).

To empirically test whether the nature of the relationship between media coverage and cartel brutality is bidirectional, we follow literature that has been developed to empirically test cycles (Jaeger, 2005). Specifically, we developed a model based on empirical reaction functions for media coverage and credit-taking in the form of the following panel vector auto-regression (VAR):

$$A(L)Y_{it} = e_{it}$$

Where $Y_{it} = x_{it}z_{it}$ and e_{it} are structural shocks which are, by definition, uncorrelated with each other. The terms z (“*exposed brutality*”) and x (“*media coverage*”) are vectors of exogenous variables that may shift the reaction function up or down, and $A(L)$ is a matrix lag polynomial of order

$A(L) = I - A_1L^1 - A_2L^2 + \dots + A_pL^p$ where A_1 is:

$$A_1 = \begin{pmatrix} \beta_{1,1}^x & \beta_{1,2}^x \\ \beta_{1,1}^z & \beta_{1,2}^z \end{pmatrix}$$

“*Media coverage*” was measured by taking advantage of the sui generis way in which Mexican state authorities count homicides and by leveraging the separate count kept by the media. Mexico's Ministry of the Interior keeps a database (fed monthly by criminal investigations conducted in each of the 32 state-level prosecutors' offices) of murders committed by drug cartels. The dataset was publicly available from December of 2006 to September of 2011 (SNSP, 2011).⁴ Meanwhile, in late 2007, the press began a large effort to cover every drug cartel homicide because of the high salience of the topic (Reforma, 2017; Milenio, 2017). We gained access to both the government and media counts of drug cartel homicides and compared them to create a proxy for how accurate media coverage was. The data is disaggregated for 32 states and over 169 weeks.

We define “*media coverage*” as a continuous variable that measures the number of homicides counted by Mexico's government that were not covered by the press. When the difference between homicides counted by the government and those reported by the press is zero (or positive), we say the area is fully-covered. When the difference is negative, this indicates that homicides are being under-covered.⁵

“*Exposure of brutality*” was measured by compiling a list of the occurrences of narco-messages from across all 32 Mexican states during 2007-2010, giving us a total of 1,731. We identified the state and week in which the banner was displayed and whether the banner was paired with a corpse or dismembered body. We found 857 banners with a corpse or dismembered body. We consider banners accompanied by a body to be significantly more brutal than those without. This database constitutes an invaluable source of information. As shown in Figure 1, banners have increased in number across the country, with some weeks having up to 50 banners with brutality.

(Figure 1 about here)

⁴ For a detailed description of how these classifications are made by Mexico's government, see Molzahn et al. (2012).

⁵ Our measure of press coverage avoids the common mistake of using press freedom as a proxy for press coverage (Hoffman et al., 2013). This means that instead of measuring media regulations, as was done in the past, we follow a more recent literature that measures media attention (An & Kwak, 2017).

We define "*exposure of brutality*" as the share of banners that were accompanied by a body, or part of one. The measure takes values from 0 to 1. Out of the total of 1,731 narco-messages, 49.5% were accompanied by a body, or part of one.

Note that efficiency and consistency are achieved in our specification because all variables in the equations are lagged (t-1 or earlier), while the error term corresponds to time t, and because all variables on the right side of the equations are the same. This specification is advised to test whether two variables can be characterized as a cycle, or as a unidirectional effect. It also suits our purposes because we want to determine if media coverage is reacting to past crime rates or to crime styles, and we do not need to solve for a dynamic equilibrium.

We complement our test with nonparametric impulse-reaction functions and forecast error in variance decomposition analysis for media coverage and cartel behavior (banner only, or a banner with a body). Our impulse-reaction functions describe how cartels react to media coverage, while holding all other shocks at zero, and vice versa. To accomplish this, as in (Love, 2006), we transform the system in a recursive vector auto-regressor using a Choleski decomposition of variance-covariance matrix of residuals. To isolate the shocks, it is necessary to decompose the residuals of the model to make them orthogonal; thus, assuming that media coverage responds to brutality at time t, while brutality responds to media coverage with a lag.

3. Results

Table 1 presents the results of our general model for two reaction functions. Each function was estimated from a panel with four lags. The first column presents the impact of public displays of brutality on media coverage. The second column presents the impact of public displays of brutality on brutality.

These results support our hypothesis that the relationship between public displays of brutality and media coverage is bidirectional, yet they also show that the directionality of the effect is much stronger from media coverage to public displays of brutality than the other way around. Column 1 shows that media coverage is impacted by public displays of brutality in statistically significant ways for three weeks. Column 2 shows that public displays of brutality are impacted by media coverage in statistically significant ways for four weeks.

(Table 1 about here)

Figure 2 presents the impulse-reaction functions with 95 percent confidence bands for public displays of brutality and media coverage. For the impulse-reaction functions, we generated the 5 percent error band with a Monte-Carlo simulation of 1000 repetitions. The graphs for the impulse-reaction functions describe how public displays of brutality reacts to media coverage, while holding all other shocks at zero, and the other way around. Both the shocks and the impacts are presented as standard deviations.

When there is a shock in media coverage the number of public displays of brutality increases during the four weeks after. In other words, criminal organizations have more incentive to display brutality in the weeks following high media coverage. The fact that this effect is statistically significant means that the positive effect revealed by the data reflects a pattern, rather than just chance.

(Figure 2 about here)

We can measure the magnitude of the effect with the forecast error variance decomposition. This measure is used to know how important each shock is to each variable in our equation. In this case, as much as 1.9% of the error in the forecast of brutality is explained by changes in media coverage.

The top-right corner shows that media coverage decreases for three weeks when there is a shock in public displays of brutality. This is consistent with research which has shown that the media may be hesitant to cover extremely brutal drug trafficking crime for fear of retaliation (Holland & Rios, 2017). According to our results, as much as 0.6% of the error in the forecast of media coverage is explained by changes in displays of brutality.

Overall, our results suggest a world in which criminals tend to exhibit more brutality when the media has covered similar crimes in the past. We found that the share of banners paired with corpses or dismembered bodies can be predicted by past levels of media coverage. We also found that a predictive relationship holds from brutality to media coverage. In other words, these results do not mean that the crime rate increased, they only indicate that the use of brutality in crimes increased. These results speak directly to the power that media has to shape behavior at many levels of society.

4. Conclusion

This paper contributes to literature concerning terrorism and crime by providing insight into the relationship between media coverage and public displays of brutality. Our findings and the literature we reviewed suggests that Mexican drug cartels have many possible incentives to seek publicity. They may change the style of their crimes, in this case by making them more visible and shocking, to get more attention and to spread their messages more effectively. They can hijack the media in this way because the media has proven incentives to give more airtime to stories about exceptional brutality.

Although we found no evidence that media coverage influenced crime rates, the ability of media coverage to spur on the increasingly shocking and horrific features of crimes does have important policy implications for both the United States and Mexico. Given that drug trafficking cartels gain power through their infamy, policies aiming to reduce coverage still merit some consideration.

However, we must not neglect the important theoretical discussion about the trade-off between desirable democratic values that restricting coverage would entail. On the one hand, freedom of information and the press are essential to an informed and civically engaged electorate. On the other hand, the severity and extent of the damage wreaked by organized criminals may be so great as to justify more restricted information in the name of national security.

The trade-off between security and other democratic values is in no way a novel subject; as in other policy areas, we must leverage the empirical evidence available to guide us as we grapple with this issue. More research is needed to either corroborate that crime rates are not affected, or to refute our findings, because filling the gap in this literature is critical to helping us navigate this trade-off and develop good public policy. Our contribution examining the case of Mexican drug cartels has been the first step in this direction, but much more work remains to be done.

Tables & Figures

Figure 1: Banners and banners with brutality over time

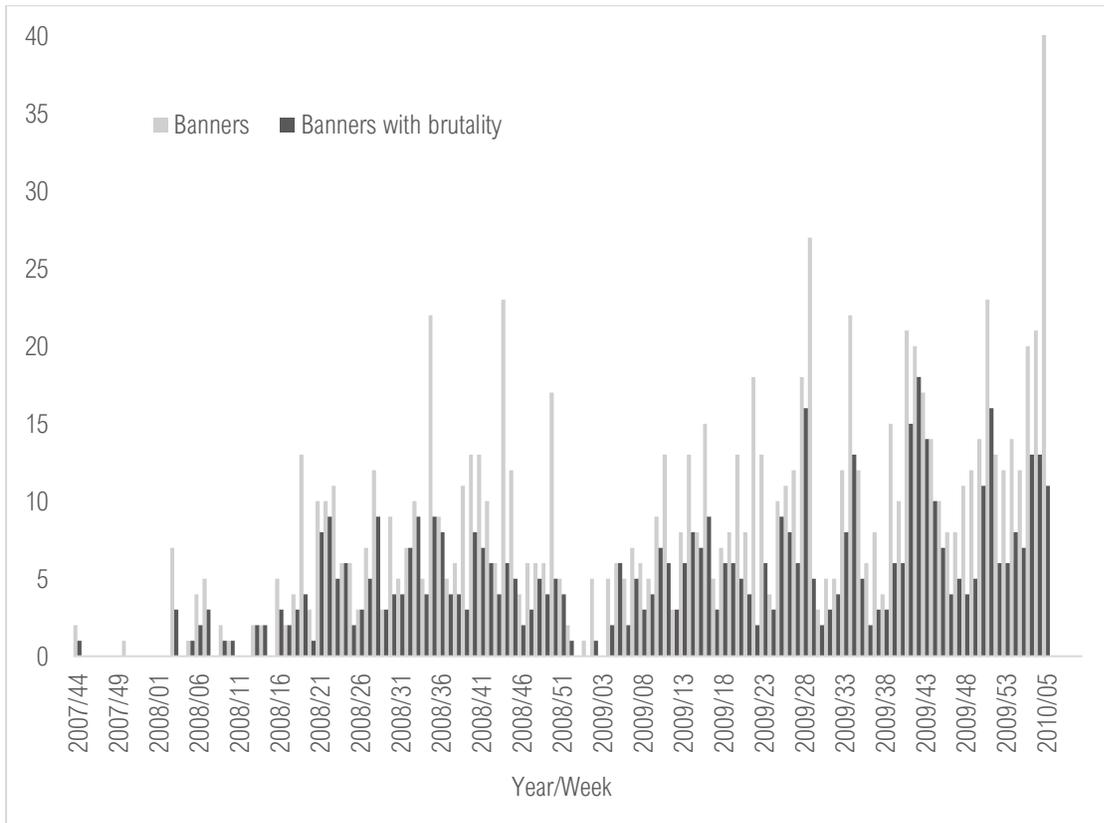


Figure 2: Reaction functions: from media coverage to exposure of brutality

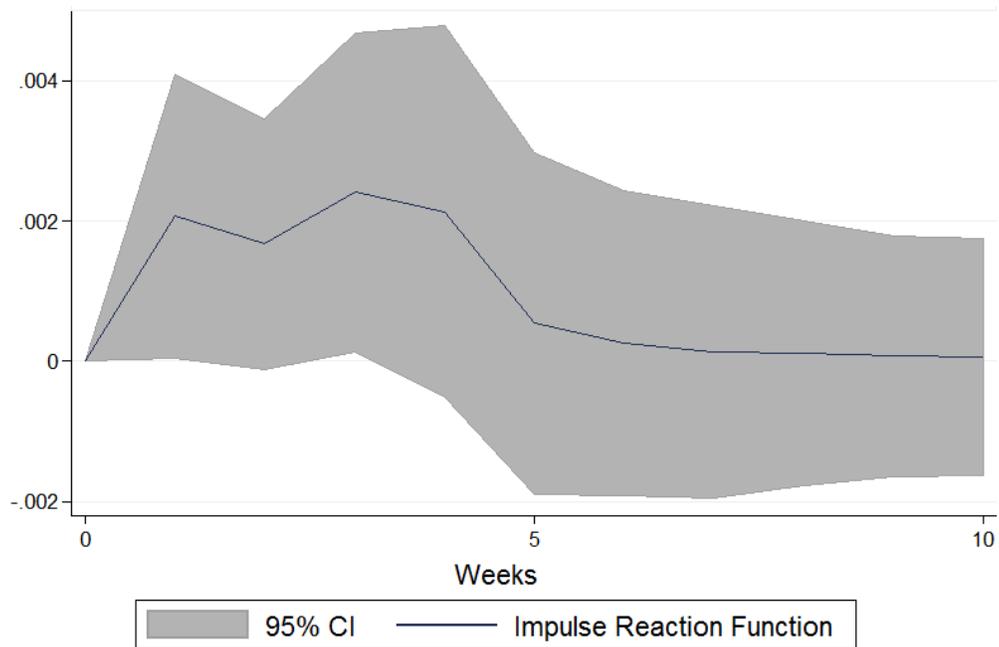


Table 1: Media coverage and exposure of brutality

Variable	Media coverage	Exposure of brutality
Media coverage (t-1)	0.0600	0.0021*
Media coverage (t-2)	-0.0169	0.0014*
Media coverage (t-3)	-0.0497	0.0020**
Media coverage (t-4)	-0.0696	0.0017*
Exposure of brutality (t-1)	-1.2504**	0.0869***
Exposure of brutality (t-2)	-1.0552*	0.1019***
Exposure of brutality (t-3)	-0.9733*	0.0479*
Exposure of brutality (t-4)	-0.8590	0.1037**

* $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$.

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