Terrorism risk and democratic preferences in Pakistan

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Terrorism Risk and Democratic Preferences in Pakistan

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Abstract

Beyond direct damages, terrorism creates fear and insecurity, potentially reducing support for democratic institutions if these are deemed inadequate to tackle the threat. To investigate this possibility, we use data from Pakistan, a country that experienced an exponential rise in terrorism since 2001. Exploiting individual-level data on democratic attitudes and district-level information on terrorist attacks, we document that persistent exposure to terrorism (and more broadly to violence) is associated to a significantly lower support for democratic values. This correlation is robust to various alternative specifications (including an IV strategy), relevant in magnitude, and more pronounced for individuals who are male, poor, or less exposed to the media. Terrorism thus threatens not only individuals, but also democratic institutions.

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1 Introduction

Protecting individual life and property is among the most important responsibilities of states, and failure on this ground may lead to regime change. In the 21$^{\text{st}}$ century, an escalation of terrorism and violent conflicts, often originating in developing countries but also with negative effects on advanced economies, threatens citizens' security in large parts of the world. We investigate the institutional legacy of violent conflicts and terrorism. In particular, we inquire whether terrorism, which typically aims at creating fear and insecurity, triggers or hinders support for democratic values and hence the potential for democratic change.

We exploit detailed information on democratic attitudes and terrorism incidence in Pakistan, which is one of the most terrorism-plagued countries in the world. High frequency and substantial variability in terrorist attacks make the country ideal to study the effects of terrorism.[1] The majority of Pakistani people support democracy and since 2008 the country has an elected government, but since independence it has oscillated between democracy and dictatorship with approximately a decade frequency.[2]

Our investigation is based on a micro-level survey conducted by Blair et al. (2013) on the model of the one run by the Freedom House (Freedom House, 2011). The survey records, for a representative sample of 6,000 respondents, individual support in 2009 for core institutional characteristics of a liberal democracy. We obtain district-level information on the incidence of terrorism between 2004 and 2008 from the Global Terrorism Database (2013). We regress individual democratic values on exposure to terrorism in the district of residence, varying the specification of controls, the measures of dependent and explanatory variables, running regressions by subsamples, exploiting interaction terms and using an instrumental variables identification strategy.

Our baseline finding is that support for democracy is negatively associated to exposure to terrorism and violence. A one-standard-deviation (s.d.) increase in terrorist events in the past five years in the district of residence is associated to a reduction in democratic values by about 1/3

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[1]On average, in the five years between 2004 and 2008, Pakistani citizens experienced in their district of residence over 10 terrorist attacks per year. While in some districts there was only one attack in five years, in other ones there were as many attacks as one every five days. The estimated direct costs of terrorism in Pakistan amount to US$ 102.5 billion since the turn of the century (Economic Survey, 2013).

[2]After independence in 1947, Pakistan was a dominion until 1956 and, roughly, a dictatorship in the 60s, 80s and 2000s and a democracy in between. The 2008 elections arrived after the Lawyer Movement, which in March 2007 protested against general Pervez Musharraf's dictatorship, which had started in 1999. To fight terrorism, both under dictatorship and democracy the government has relied more on the armed forces than on the police.

of a s.d.. Besides being relevant in magnitude, such effect is highly statistically significant, coherent across distinct measures of democratic values, robust across various specifications of included controls, across different measures of past and current exposure to terrorism and violence, across subsamples based on gender, urbanization and education level, and also robust to instrumenting terrorism and violence with the distance from the Pak-Afghan border (the Durand Line) and with religious fractionalization, respectively. Overall, while we refrain from strong causality claims, our evidence is supportive of a causal interpretation.

Our favorite interpretation is that individuals are willing to trade off democratic rights for security, and exposure to terrorism raises the importance of security and reduces that of democracy. The reduction in democratic values in the face of terror is more pronounced among men than among women, most likely because the two genders trade off differently security for democracy, rather than because of differences in victimization risk or in media exposure. It is also more pronounced among individuals that are poorer and that have better access to the media, presumably because the former have fewer self-protection tools available, and the institutional attitudes of the latter are less affected by local events and more by distant ones. The result on media exposure casts doubts on the idea that news coverage helps spreading terrorists' message and make it more effective.

Our investigation is related to the economic literature on political transition, which has proposed different channels through which negative shocks might affect democracy and democratic preferences (Acemoglu and Robinson, 2001; Brückner and Ciccone, 2011; Ramsay, 2011). According to Acemoglu and Robinson (2001), bad economic conditions lower the opportunity cost of revolt, which incentivizes the state to provide rights in equilibrium. Our approach differs from Brückner and Ciccone (2011) and Ramsay (2011) on two main grounds: first, we focus on persistent exposure to terrorism rather than on transitory shocks; second, we investigate its effects on individual attitudes and preferences rather than on aggregate behavior.

Our study is also related to Voors et al. (2012) and Bellows and Miguel (2009), who, among others, find that individuals exposed to violence are more altruistic towards their neighbors, are more risk seeking, have higher discount rates, and are more likely to engage in political groups, vote in elections, attend community meetings and contribute to local social services. As it is far from clear how these effects on civic engagement and risk and time preferences translate into democratic attitudes, our findings can be seen in line with those of Blanco and Ruiz (2013) and

Blanco (2012), who explore the negative impact of crime victimization and insecurity on satisfaction with democracy and on trust in institutions in Colombia and Mexico, respectively.

The rest of the paper is organized as follows. Section 2 expands on the related literature; Section 3 presents the data; Section 4 explains the empirical strategy; Section 5 presents the baseline empirical analysis; Section 6 investigates how the response to terrorism depends on media exposure and on income; and Section 7 discusses the results and concludes; Instrumental Variable (IV) results are reported in the Online Appendix.

2   Terrorism, Violence and Individual Preferences

The literature on political economy discovers both optimistic and pessimistic results while exploring the impact of civil wars, violence, conflict, organized crimes and terrorism on institutional and democratic developments. It has investigated the following questions in different times and places: what is the democratic and institutional legacy of violence and conflict? Can perpetrators and victims become productive citizens once violence is over? In this section, we limit our focus to the exogenous impact (if any) of civil war, violent conflicts and terrorism on social and political institutions including social capital, norms, democratic values and political participation.

To start with the optimistic view, psychologists found that victims of civil war and violent conflicts are resilient in general. In particular, victims of violence experience more personal growth than distress (Tedeschi and Calhoun, 2004), and display greater collective action (Wood, 2003) and greater awareness and political participation (Bellows and Miguel, 2006, 2009) in the aftermath of a violent trauma.

Similarly, the political economy literature shows that violent conflicts and civil wars lead to the development of democratic institutions. For example, Cramer (2006) reports that violence can "produce institutional changes, amendments to the rules of the game. In retrospect, many changes that come to be seen as progressive have their origins in social conflicts that have taken a violent turn. Herein lies a paradox of violence and war: violence destroys but is also often associated with social creativity." Following these arguments, Blattman (2009) argues that past abductions of citizens by rebels in northern Uganda have led to increased political engagement of victims. Similarly, Bellows and Miguel (2009) find a positive correlation between conflict and socio-political

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behavior in Sierra Leone. In line with this literature, Bateson (2012) collects evidence from five continents, which shows that individuals who are recently victimized participate more in politics as compared to non-victims. They become more engaged in political and civic life.

The optimistic view is further explored by political economists to analyze the correlation between violent conflicts and social capital. The relationship between conflict and social capital can be bi-directional. At one hand, asymmetric violence and terror increase tension, decrease cooperation, collective actions and trust (Colletta and Cullen, 2000). Studying comparative case studies, Colletta and Cullen (2000) found that violence weaken the social fabric, and wreck the social capital of a community, undermine interpersonal trust and collective action, divide community members, destroy values and norms, and if not solved, can lead to more communal conflict. However, on the other hand, individuals living under violent events are uncertain about their lives and economic opportunities, therefore social interactions and capital might be formed on the solidarity basis to face a common external threat.

In line with the optimistic results, a significant number of studies have explored that violent conflicts and civil wars improve social capital, instead of destroying it. It is observed that few African countries have witnessed a rapid post-war recovery which was not predicted by the Solow growth models. Social scientists have attributed this surge in growth to a change in social capital generated by violence itself. Analogous to this literature, Voors et al. (2012) study "that conflict affects preferences: individuals exposed to violence display more altruistic behavior towards their neighbors, are more risk seeking, and have higher discount rates." Similarly, Bellows and Miguel (2009) show that individuals who were exposed to violence in Sierra Leone were more likely to participate in political groups and social community; vote in local elections, attend community meetings and contribute to local public goods. Also, Gilligan et al. (2010) find that individuals who were exposed to violence and conflict during Nepal's war are more likely to exhibit higher levels of social capital.

Nevertheless, a significant number of studies have also discovered pessimistic results. They include the 2003 World Bank report (World Bank, 2003: 32) that claims "[t]he legacy effects of civil war are usually so adverse that they cannot reasonably be viewed as social progress....[Civil war] has been development in reverse" (Collier and Others, 2003). Similarly, terrorism, violence, conflict and civil wars are typically linked to the destruction of physical infrastructure and temporary drops

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in income. It has been studied, for example, by Davis and Weinstein (2002), Brakman et al. (2004) and Miguel and Roland (2011) for the economies of Japan, Germany and Vietnam, respectively. If one agrees with the above inferences, then the rebuilding of society after violent conflicts and terrorism may be more challenging and unlikely, and can contribute to the well known 'conflict trap' (Collier, 2007).

It is a well established fact that terrorism and violent conflicts adversely affect physical capital, which leads to a temporary drop in income according to a simple Solow-style growth model. This simple argument ignores their effects on institutional development, social norms, social capital, social organizations and preferences. If terrorism and warfare destroy physical capital and also lead to the erosion of social capital, social and cultural institutions, political and democratic processes, and raise the level of impatience, then adverse level and growth effects can eventuate. The opposite can happen if exposure to violence invites institutional improvement including democratic processes.

Analogously, some studies find a negative association between violent conflicts and electoral participation. For example, Bratton (2008) shows that violence negatively affects electoral participation in Nigeria, and that the most negative effect on turnout is that of the "experience of threat of violence." Similarly, Collier and Vicente (2014) argue that voter intimidation in violent circumstances is effective in reducing voter turnout. In line with these results, Pinchotti and Verwimp (2007) find that exposure to conflict decreases perception of fairness and trust within communities in post-war Tajikistan. While some of the literature on asymmetric warfare and social capital tries to distinguish between correlation and causation, limits to identification imply that we still have much to learn.

Finally, our investigation is related to Fair et al. (2014), who document a positive correlation at the individual level between support for democracy and for militant groups in Pakistan. Militant groups are often perceived as fighting for the liberation and self-determination of some oppressed group or territory, with a degree of overlap between democratic and militant rhetoric. This is important for two reasons: first, to bear in mind that democratic values, while interesting and important per se, may be associated to different sets of preferences and behaviors in different contexts; second, because more democratically oriented districts in Pakistan might offer more support to terrorists and therefore attract them. We deal with the implications of this possibility in the next sections.

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3 Data

We have utilized multiple data sources to collect information on our variables of interest, which are: (i) individuals' opinions/preferences on democratic values; (ii) the number of terrorist incidents at the district level; (iii) individual and district-level measures of income, wealth and inequality; and (iv) individual and district-level geographic and socio-religious characteristics. Tables 1-2 provide summary statistics of all relevant variables used in the following analysis.

3.1 Democratic Attitudes

We derive individual attitudes towards democracy from a micro-level survey conducted by Blair et al. (2013) in collaboration with the Pakistani non-governmental organization Socio-Economic Development Consultants (SEDCO) to measure individual-level socio-economic, political and religious attitudes in 2009.[3] They fielded a 6,000-households national level survey to a stratified random sample of adult Pakistani men and women.[4] They follow Freedom in the World (FIW) (Freedom House, 2011) and measure individual support for six institutional characteristics that are at the core of liberal democracies: governance by elected representatives, free speech, freedom of assembly, civilian control over the military, independent courts and property rights protection.[5] The corresponding variables are measured on a five-point scale, with higher values denoting higher support

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[3] It is a challenging task to measure people's opinion on religion, civil liberties, human rights, institutional and democratic values in risky areas. Responses can be expressive in survey data: Hillman (2010) notes that "response in a survey is a low-cost action that allows people to obtain expressive utility from the answer that they give, without consequences for any actions they need to undertake." Moreover, the measurement and definition of 'democratic values' pose specific challenges, which are discussed, among others, by Munck and Verkuilen (2002).

[4] They used the sample framework designed by the Federal Bureau of Statistics (FBS) of Pakistan for the nation and for the four main provinces of the country: Punjab, Sindh, Khyber Pakhtunkhwa (KPK) and Baluchistan. Following the rural/urban breakdown in Pakistan's census, they randomly selected respondents within 500 primary sampling units (PSU): 332 in rural and 168 in urban areas. The data is oversampled in the smaller provinces (Baluchistan and KPK) to ensure the collection of sufficient information in these sparsely populated and less developed provinces. Post-stratification survey weights were based on the last population census. A face-to-face questionnaire was fielded by six mixed-gender teams between April 21 and May 25, 2009. Males surveyed males and females surveyed females, consistent with the Pakistan's cultural values and norms to facilitate the interviewees.

[5] In the Blair et al. (2013) survey, opinions on the above six democratic values are recorded through the following questions: (i) How important is it for you to live in a country that is governed by representatives elected by the people? [*governance by elected representatives*]; (ii) How important is it that individuals be able to express their political views, even though other people may not agree with them? [*freedom of expression*]; (iii) How important is it that individuals be able to meet with others to work on political issues? [*freedom of assembly*]; (iv) The 1973 Constitution of Pakistan says civilians should control the military. This means the military cannot take action without orders from civilian leaders. In your opinion, how much control should civilians have over the military? [*civilian control over the military*]; (v) How important is it for you to live in a country where the decisions of the courts are independent from influence by political and military authorities? [*independent judiciary*]; and (vi) How important is it that individual property rights be secure? This means the state cannot take away their things without proper court proceedings? [*property rights*].

for democratic institutions.[6] We construct an additive index of the six measures (a simple sum, on a thirty-point scale) to capture individuals' general attitude towards democracy (*democratic values*). Since the specific variables capture different aspects (indeed, their pairwise correlations are relatively low, ranging from 0.05 to 0.48), we also consider them separately. As shown in figures 1a-1f, most households consider democratic institutions (with the exception of 'civilian control over the military') either extremely or very important. Table 1 (Panel A) presents summary statistics of the measures of democratic values.

Table 1: Summary Statistics for the Main Variables

| Variable	Mean	Std. Dev.	Min	Max
Panel A: Individual-Level Democratic Values (2009)				
Democratic Values	23.93	3.85	8	30
Elected Representatives	4.10	1.00	1	5
Freedom of Expression	4.14	0.95	1	5
Freedom of Assembly	4.22	0.92	1	5
Civilian Control over Military	2.79	1.35	1	5
Independent Judiciary	4.19	0.97	1	5
Property Rights	4.34	0.99	1	5
Panel B: District-Level Terrorist Attacks and Violence Incidents				
Past Terrorism (2004-2008)	52.00	82.04	1	365
Past Violence (2004-2008)	246.87	367.20	1	1278
Current Terrorism (Jan-May 2009)	10.64	18.53	1	84
Current Violence (Jan-May 2009)	75.47	125.22	1	537

3.2 Terrorism and Violence

The most important explanatory variable of our study is the number of district-level terrorist attacks in Pakistan, obtained from the Global Terrorism Database (2013) (GTD).[7] As recognized by the GTD, one of the main objectives of terrorist groups is to coerce and intimidate a larger audience than the immediate victims. Hence, terrorism has a wide potential to modify political and economic attitudes at least in the district or province where attacks take place. For each

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[6]We translate the ordered qualitative answer categories, ranging from 'not important at all' to 'extremely important', into numbers from 1 to 5, with 5 denoting the highest level of support for democratic values.

[7]A terrorist attack is included in GTD if it "fulfills the following three criteria: i) The incident must be intentional; ii) The incident must entail some level of violence or threat of violence and iii) The perpetrators of the incidents must be sub-national actors. In addition, at least two of the following three criteria must be present for an incident to be included in the GTD: i) The act must be aimed at attaining a political, economic, religious or social goal; ii) There must be evidence of an intention to coerce, intimidate or convey some other message to a larger audience (or audiences) than the immediate victims and iii) The action must be outside the context of legitimate warfare activities."

Figure 1: Democratic Values (Importance Attributed to Democratic Institutions)
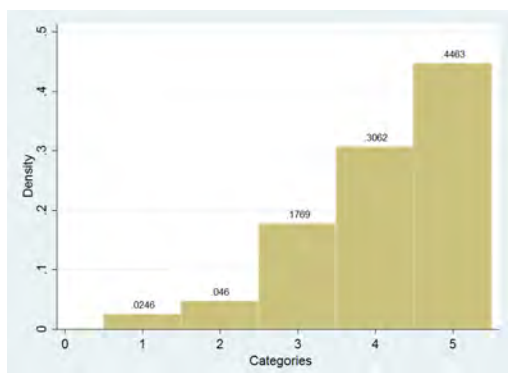
(a) Elected Representatives
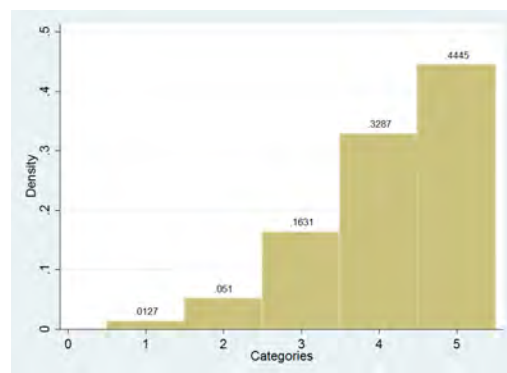
(b) Freedom of Expression

(c) Freedom of Assembly

(d) Civilian Control over the Military

(e) Independent Judiciary

(f) Property Rights

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district, we consider the total number of terrorist events between 2004-2008 (*past terrorism*).

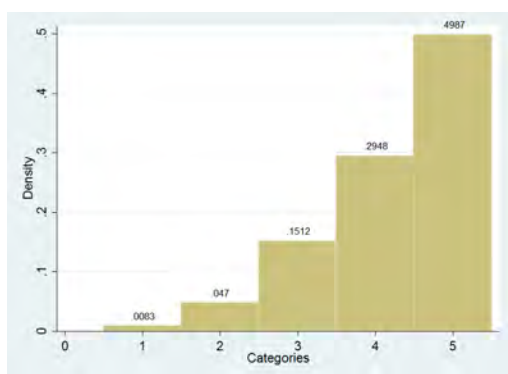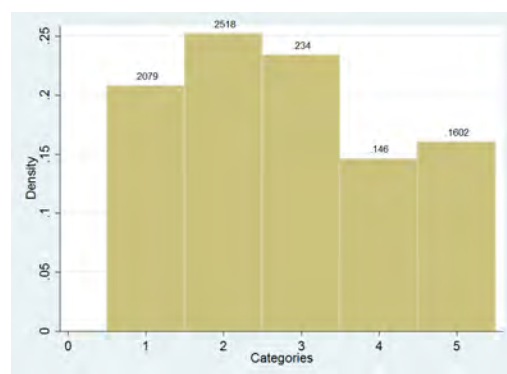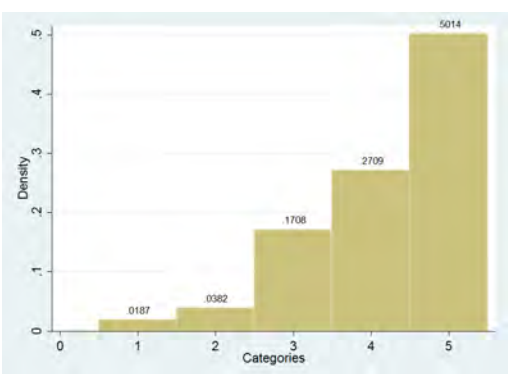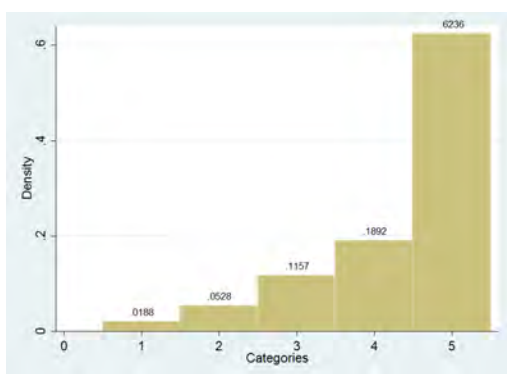We also exploit data from De Mesquita et al. (2013) on other forms of violence, which might affect individual insecurity and hence politico-institutional preferences: assassination, extortion, target killings, violent political demonstrations, communal, sectarian and ethnic clashes. For each district, we focus on the total number of such incidents between 2004-2008 (*past violence*). We additionally use contemporaneous measures of risk exposure, namely the number of terrorist attacks and of violence incidents in a district between January and May, 2009 (labeled *current terrorism* and *current violence*, respectively).

Table 1 (Panel B) reports descriptive statistics for terrorism and violence. Figures 2a-2d visualize terrorist attacks and violence incidents over time and space.[8] In particular, Figure 2a documents the exponential increase in terrorism in Pakistan since 2001, and especially since 2004. Figure 2b shows that there has also been a more general increase in violence. Figures 2c and 2d show that terrorism and violence are not randomly distributed across the country, but rather concentrated in certain provinces. Their cross-sectional correlation in the 2004-2008 period is 0.70.

3.3 Control Variables

Control variables include 4 province dummies and demographic, socio-economic and religious characteristics at the individual and district level. Demographic controls are rural/urban belonging, gender, age, a set of 5 dummies for native language, educational level, marital status, and district population density and share of urban population. Socio-economic characteristics include household income, 11 occupational dummies, and individual perceptions about own relative to neighbors' income, current financial situation relative to the past, need for land reforms and importance of economic inequality as a problem. They also include wealth, which is captured by a simple average of the dummies for possession of the following assets (at individual level): television, air conditioner, street lamps, home outdoor area, computer, cell phone, car. Socio-economic controls additionally include a multiple deprivation index, which is constructed from district-level education, health and housing variables. Lastly, individual religious controls include sect type, recitation of the holy book,

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[8] We have district-level terrorist attacks from 2001 to 2012 and violence incidents from 1988 to 2011. Our baseline analysis focuses on the 2004-2008 period, both because of the surge in terrorism since 2004, and because we are interested in exposure to terrorism (and violence) prior to the measure of democratic values in 2009. Our baseline results do not change if we consider terrorism (and violence) from 2001 to 2008. This analysis is available upon request.

Figure 2: Terrorism and Violence Over Time and Space
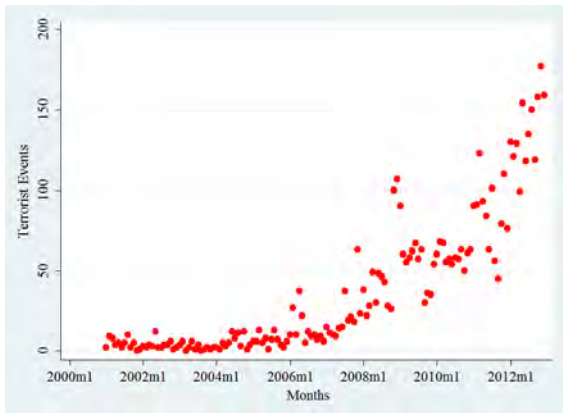
(a) Monthly Terrorism in Pakistan, 2001-2012
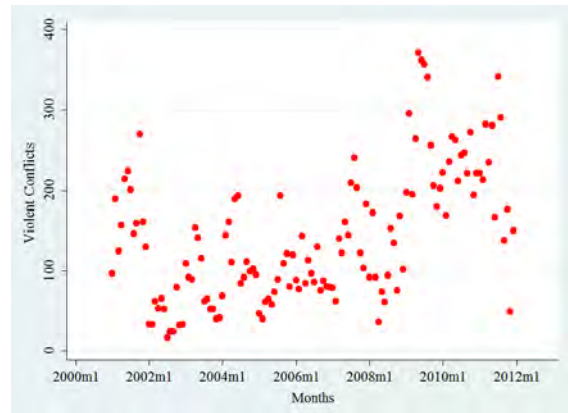
(b) Monthly Violence in Pakistan, 2001-2011

(c) A Map of Terrorism, 2004-2008 (Circle Size Denotes Intensity)

(d) A Map of Violence, 2004-2008 (Circle Size Denotes Intensity)

frequency of recitation and desired role of the Sharia law in the legal framework. In Section 6 we also use a dummy for watching an international news channel such as Al Jazeera, CNN or BBC, a dummy for accessing the Internet to do web site browsing, or to send and receive emails, and a variable capturing media exposure, which is a simple average of the dummies for international news, internet, and possession of a television, a computer, and a cell phone (the correlation between media exposure and the wealth measure is 0.77). Table 2 presents the descriptive statistics for control variables, as well as for two district-level variables, distance from the Durand Line and religious fractionalization, which are used in the Online Appendix as instruments for terrorism and violence, respectively.

4   Empirical Strategy

This section presents the econometric strategy to explore the effect of district-level terrorism (and violence) on individual-level support for democratic values. Since values are only measured at one point in time, we have to rely on the cross-sectional dimension. Our baseline evidence is obtained by estimating through Ordinary Least Squares (OLS) the following equation:

$$\log DV_i = \beta \, \log PT_d + \gamma^{'} \, X_i + \delta^{'} \, Z_d + \phi_p + \varepsilon_i \tag{1}$$

where DV_i represents the democratic values of individual i (who resides in district d, belonging to province p) in 2009 (*democratic values*); PT_d is the district-level total number of terrorist attacks in the 2004-2008 period (*past terrorism*); X_i is a set of individual control variables; Z_d is a set of district-level controls; ϕ_p are province dummies; and ε_i is an error term. Controls X_i and Z_d comprise demographic, religious and socio-economic determinants of individual preferences for democracy.

The coefficient of interest, β, is the elasticity of *democratic values* to *past terrorism*. If past district-level terrorism is exogenous to current individual-level democratic values, β can have a causal interpretation. Yet, in cross-sectional studies there are several threats to exogeneity, including omitted variables and reverse causation.

To reduce omitted variable problems we consider a wide set of control variables. Some of them, like gender and age, are clearly exogenous. Other ones, like economic and religious opinions or

Table 2: Summary Statistics for Demographic, Social, Economic and Religious Controls

Variable(s)	Mean	Std. Dev.	Min	Max
Individual Level Demographic, Social, Economic and Religious Controls				
Urban	0.34	0.47	0	1
Female	0.48	0.50	0	1
Age	33.50	11.35	18	88
Age Squared	1251.48	895.64	324	7744
Marital Status	0.77	0.42	0	1
Education (all categories)	*4.22*	*2.23*	*1*	*7*
Primary	0.13	0.33	0	1
Middle	0.14	0.35	0	1
Matric (Tenth Class)	0.19	0.39	0	1
Intermediate	0.13	0.33	0	1
Graduate	0.06	0.25	0	1
Professionals	0.02	0.14	0	1
Illiterate	0.33	0.47	0	1
Household Income	9.64	6.85	0.10	100
Wealth	0.43	0.19	0	1
Earn Less	0.36	0.48	0	1
Earn More	0.18	0.39	0	1
Better Financial Situation	0.30	0.46	0	1
Worse Financial Situation	0.50	0.50	0	1
Need for Land Reforms	0.40	0.49	0	1
Perceived Inequality	0.54	0.50	0	1
Sunni	0.96	0.18	0	1
Recitation of the Holy Book	0.57	0.50	0	1
Frequency of Recitation	0.20	0.40	0	1
Desired Role of Sharia Law	0.73	0.26	0	1
International News	0.33	0.47	0	1
Internet	0.08	0.26	0	1
Media Exposure	0.36	0.25	0	1
District Level Controls				
Multiple Deprivation Index (MDI)	32.89	14.04	12.77	75.29
Population Density	2161.52	5878.87	20.64	33014
Urbanization Rate	38.28	26.29	5.3	100
Instrumental Variable(s)				
Durand Line	460.92	208.48	137.38	912.25
Fractionalization	0.50	0.17	0.25	0.92

Note: Household income is in thousand rupees; wealth is an additive index reflecting possession of various assets (TV, air conditioning, cell phone, car, outdoor area, street lamps, computer); earn less and earn more compare individual to neighbors' income; better financial and worse financial situations compare the current situation to the past period; media exposure averages the dummies for watching international news channels, accessing the Internet, and possessing a TV, a computer, and a cell phone. Durand Line is the distance of a district from the Pak-Afghan border. Fractionalization is a district-level index of religious fractionalization. Control variables also includes a set of language, occupation and province dummies.

religious practice, may be jointly determined with democratic values. In different ways, both their inclusion and their exclusion may be problematic. We present six specifications of equation (1), progressively including different sets of controls, in order to see how the estimates of β are affected.

Reverse causation concerns are attenuated by the fact that democratic values are measured in 2009 and at the individual level, whereas terrorism is measured over the 2004-2008 and at the district level. Yet, if democratic values are persistent, and if in Pakistan they are associated to higher support for militant politics, as the evidence by Fair et al. (2014) documents, it is possible that, especially before the return to democracy, terrorists found more support and concentrated their activity precisely where people had stronger democratic values. Another possibility is that terrorists perceived democracy as a threat and specifically targeted areas with stronger democratic attitudes. In either case, we might expect a positive correlation between terrorism and democratic values driven by endogeneity. Alternatively, if terrorists operate more easily in districts where the population is less supportive of democracy, we might have an endogeity-driven negative correlation.

It is not easy to select among these possibilities on a priori grounds. To tackle them empirically, we take an instrumental variable (IV) approach, using distance from the Pak-Afghan border (the Durand line) as an instrument for terrorism. Distance from the border reduces infiltration of terrorists from Afghanistan, making the instrument relevant, and conditioning on a wide set of controls makes the exclusion restriction plausible.[9] Yet, the validity of the exclusion restriction cannot be proved and reasonable doubts can be raised. We therefore present the IV analysis in the Online Appendix.

After presenting our baseline evidence, we move to a more detailed investigation. First, we separately consider the six distinct democratic values in place of the additive index as a dependent variable.[10] Second, to better understand the terms of a possible trade-off between security and democratic rights, we consider past and current measures of terrorism and violence as alternative explanatory variables. Third, we investigate whether the effect of terrorism is heterogeneous in the population by repeating the analysis by different subsamples (by gender, urban/rural areas, and

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[9]In the case of violence, we use district-level religious fractionalization as an instrument, since it may favor religious clashes.

[10]Given the ordinal nature of the six original measures of democratic values, we check the robustness of our results by also estimating ordered probit and probit models (the latter for dummy transformations of the variables). We also perform a Principal Component Analysis (PCA) on the six democratic preferences and use the first principal component as an alternative dependent variable.

education). Finally, we investigate the channel through which terrorism is linked to democratic attitudes by looking at interactions with income and media exposure.

5   Democratic Attitudes and Terrorism

5.1   Baseline Evidence

We first investigate the effect of terrorism on individuals' general attitudes towards democracy. Table 3 reports OLS estimates of equation (1), where the dependent variable is the log of the additive index of democratic values in 2009 (*democratic values*) and the explanatory variable is the log of the number of terrorist attacks in a district in 2004-2008 (*past terrorism*). Column 1 does not include any control (but a constant, which is always included) and thus presents a raw correlation: a one-percent increase in the number of terrorist attacks in a district is associated to a significant reduction in democratic values by 0.021 percentage points, implying that a s.d. increase in terrorism is associated to a reduction in support for democracy by about 3% (almost 1/4 of a s.d.). Columns 2 to 6 progressively add different sets of covariates, namely province dummies, demographic variables, economic controls, language dummies, and religious controls, respectively.[11] In all specifications, the coefficient of terrorism is negative and significant at the one-percent level. It slightly increases in magnitude when conditioning on province dummies, and then remains stable in the other specifications, implying that a s.d. increase in terrorism is associated to a reduction in democratic values by about 5% (1/3 of a s.d.).[12]

As argued in Section 4, the negative association we document between terrorism and support for democracy may reflect a causal effect of the former on the latter, but it might also be driven by endogeneity. The stability of the coefficient of interest across specifications indicates that terrorism is essentially orthogonal to the many controls we consider, and therefore attenuates concerns for omitted variable bias. If endogeneity were due to the fact that terrorists especially target more democratic areas, as implied by two of the arguments considered in Section 4, we should expect a positive correlation. This reinforces our results, since we find a robust negative correlation. Yet, we

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[11]Regression results with the estimated coefficients of control variables are available upon request.

[12]The results are virtually unchanged, in terms of sign and significance, if the model is estimated with ordered probit, probit (with the dependent variables transformed in dummies), or OLS using the first principal component of the six democratic values as a dependent variable. These regressions are not reported, but are available upon request.

cannot exclude the possibility that our findings are instead driven by the fact that terrorists find it easier to operate in areas that are less supportive of democracy. To tackle this possibility, as well as other potential sources of endogeneity, in the Online Appendix we instrument terrorism with distance from the Pak-Afghan border. The IV estimate of the coefficient of *past terrorism* is equal in sign and significance to the OLS estimate, and it is roughly three times larger in magnitude. This analysis thus supports the idea that exposure to terrorism weakens democratic values. We return to this issue in Section 7.

Table 3: Terrorism and Democratic Values

	(1)	(2)	(3)	(4)	(5)	(6)
Past Terrorism (log)	-0.021***	-0.028***	-0.027***	-0.029***	-0.031***	-0.030***
	[0.001]	[0.003]	[0.003]	[0.003]	[0.003]	[0.003]
Observations	5,626	5,626	5,626	4,293	3,983	3,947
R-squared	0.036	0.181	0.182	0.303	0.295	0.297
Province Dummies	N	Y	Y	Y	Y	Y
Demographic Controls	N	N	Y	Y	Y	Y
Economic Controls	N	N	N	Y	Y	Y
Language Controls	N	N	N	N	Y	Y
Religious Controls	N	N	N	N	N	Y

Note: This table reports OLS estimates. The dependent variable is the log of the additive index of individual democratic values in 2009 (*democratic values*). The explanatory variable is the log of the number of terrorist attacks in a district in 2004-2008 (*past terrorism*). The top panel reports the estimated elasticity of *democratic values* to *past terrorism*. The bottom panel indicates the control variables included in the specification of each column. Demographic controls include gender, marital status, rural/urban, age, age-square and formal education level. Economic controls include income, occupation, wealth, multiple deprivation index, perceptions on land reforms, inequality, income comparison with neighbors and financial comparison with the past. Language controls are dummies for the five main languages spoken across Pakistan. Religious controls include sect type, number of prayers, recitation of the holy book, frequency of recitation and current role of the Sharia's law. Robust standard errors (clustered at district level) are presented in brackets.
$* * *p < 0.01$, $* * p < 0.05$ and $*p < 0.10$.

5.2 Terrorism and Distinct Democratic Values

The additive index of democratic values captures general attitudes towards democracy. In this section we explore whether terrorism has a different impact on specific values concerning different aspects of liberal democracy. Table 4 reports OLS estimates of regressions that have the same specification of column 6 of Table 3 (the one including all controls), but the dependent variable

is the specific democratic value (in log) reported on the top of each column.[13] The coefficient of terrorism is always negative and significant at the one-percent level (five percent for the importance attributed to property right protection). A s.d. increase in terrorism is associated to a reduction in the support for elected representatives by 7% (about 1/3 of a s.d.), for freedom of expression by 4% (about 1/5 of a s.d.), for freedom of assembly by 4% (about 1/5 of a s.d.), for civilian control over the military by 10% (about 1/5 of a s.d.), for independent judiciary by 3% (about 1/6 of a s.d.), and for property rights protection by 2% (about 1/10 of a s.d.).

Although different values capture different aspects of democracy (as already noticed, they are not highly correlated with one another), the effect of terrorism is essentially the same on all of them. Together with those of Table 3, these results are coherent with the idea that, while most individuals in Pakistan support democratic institutions, in the face of terror they are willing to trade off democratic rights for security.

Table 4: Terrorism and Distinct Democratic Values

	E.Rep.	F.Exp.	F.Assemb.	M.Control	I.Judic.	P.Rights
Past Terrorism (log)	-0.045***	-0.026***	-0.026***	-0.067***	-0.021***	-0.015**
	[0.007]	[0.006]	[0.005]	[0.014]	[0.007]	[0.006]
Observations	4,060	4,067	4,061	4,029	4,060	4,082
R-squared	0.12	0.21	0.20	0.23	0.15	0.23
Province Dummies	Y	Y	Y	Y	Y	Y
Demographic Controls	Y	Y	Y	Y	Y	Y
Economic Controls	Y	Y	Y	Y	Y	Y
Language Controls	Y	Y	Y	Y	Y	Y
Religious Controls	Y	Y	Y	Y	Y	Y

Note: This table reports OLS estimates. In each column, the dependent variable is the log of the specific democratic value reported on the top of it: E.Rep.=*Governance by Elected Representatives*, F.Exp.=*Freedom of Expression*, F.Assemb.=*Freedom of Assembly*, M.Control=*Civilian Control over the Military*, I.Judic.=*Independent Judiciary*, and P.Rights=*Property Rights*. The estimated elasticity of *democratic values* to *past terrorism* is reported. In all columns, the specification of included controls is the same as in column 6 of Table 3. Robust standard errors (clustered at district level) are presented in brackets.
$* * * p < 0.01$, $* * p < 0.05$ and $* p < 0.10$.

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[13]We only present the full specification. Repeating each regression with all the specifications of included controls considered in Table 3 yield very similar results, which are available upon request.

5.3 Past and Current Exposure to Terrorism and Violence

If the above interpretation is correct, not only terrorism, but also other forms of violence might have a similar effect of reducing support for democratic institutions. We investigate this possibility in Table 5, which reports OLS estimates of the elasticity of *democratic values* to different measures of risk exposure, always adopting the full specification of included controls. Column 1 reproduces, for the reader's convenience, the result already displayed in column 6 of Table 3. Column 2 substitutes *past violence* (the number of violence incidents in a district in 2004-2008) for *past terrorism* as an explanatory variable. The elasticity of *democratic values* to *past violence* has the same sign and significance as that to *past terrorism* and it is slightly lower in magnitude: a s.d. increase in *past violence* is associated to a reduction in *democratic values* by 3% (1/5 of a s.d.).[14] This result is consistent with the idea that past exposure to terrorism scares more than past exposure to general violence, but both generate insecurity that makes individuals willing to give up some democratic rights.

While reverse causation is less of a concern for violence than it is for terrorism, one may still suspect that these results are driven by endogeneity. The Online Appendix presents IV regressions in which violence is instrumented with religious fractionalization. The IV estimate of the coefficient of *past violence* is equal in sign and significance to the OLS estimante, and it is about three times larger in magnitude. The IV analysis thus supports a causal interpretation of the effect of terrorism and violence on democratic values.

One may wonder whether democratic attitudes are more affected by past or by current exposure to risk. On the one hand, more recent experiences may be more vividly impressed in memory and may still arouse stronger emotions, thus affecting individual attitudes more deeply than past events. On the other hand, political values might change slowly over time and be more elastic to risk exposure in the long run than in the short run. To tackle such questions, Columns 3 and 4 repeat the analysis of columns 1 and 2 substituting contemporaneous for past exposure to terrorism and violence. Since political attitudes were recorded around May 2009, the new explanatory variables, *current terrorism* and *current violence*, respectively measure the number of terrorist attacks and

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[14]Repeating the analysis with all the specifications considered in Table 3 shows that, at least once conditioning on province dummies, the sign, significance and magnitude of the coefficient of *past violence* are extremely robust across specifications.

of violence incidents in a district between January and May, 2009. The estimated elasticity of *democratic values* to both measures of contemporaneous risk exposure is negative and statistically significant, with a drop in magnitude and significance for terrorism but not for violence.[15]

These results are consistent with the idea that insecurity reduces support for democratic institutions both on impact and in the long run. The drop in significance in the elasticity of *democratic values* to *current terrorism* (relative to *past terrorism*) might be partly due to the fact that restricting from five years to five months reduces precision (especially for terrorism, which is less frequent than violence), but the drop in magnitude also suggests that institutional preferences respond sluggishly to the experience of terrorism.

Table 5: Past and Current Exposure to Terrorism and Violence

	(1)	(2)	(3)	(4)
Past Terrorism (log)	-0.030***			
	[0.003]			
Past Violence (log)		-0.020***		
		[0.003]		
Current Terrorism (log)			-0.007*	
			[0.004]	
Current Violence (log)				-0.024***
				[0.003]
Observations	3,947	3,947	3,947	3,947
R-squared	0.297	0.283	0.290	0.295
Province Dummies	Y	Y	Y	Y
Demographic Controls	Y	Y	Y	Y
Economic Controls	Y	Y	Y	Y
Language Controls	Y	Y	Y	Y
Religious Controls	Y	Y	Y	Y

Note: This table reports OLS estimates of the elasticity of *democratic values* (which is measured around May, 2009) to past and current measures of risk exposure. *Past terrorism* and *past violence* refer to the number of terrorist attacks and violence incidents, respectively, in a district in 2004-2008, where violence includes assassination, extortion, target killings, violent political demonstrations, communal, sectarian and ethnic clashes. *Current terrorism* and *current violence* are similar variables measured between January and May 2009. In all columns, the specification of included controls is the same as in column 6 of Table 3. Robust standard errors (clustered at district level) are presented in brackets.
$***p < 0.01$, $**p < 0.05$ and $*p < 0.10$.

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[15]A one-s.d. increase in *current terrorism* and *current violence* are associated to a reduction in *democratic values* by 1% (less than 1/10 of a s.d.) and 4% (1/4 of a s.d.), respectively.

5.4 Heterogeneous Effects by Subsamples

This section investigates whether the association between democratic values and terrorism is heterogeneous across subgroups. For different subsamples, Table 6 reports OLS estimates of the elasticity of *democratic values* to *past terrorism*, always adopting the full specification of included controls.[16] The seven columns of Table 6 correspond to the following subsamples: males, females, rural population, urban population, and individuals with low, medium and high educational level (measured as up to five, between six and ten, and more than ten years of education, respectively).

Table 6: Terrorism and Democratic Values in Different Subsamples

	Male	Female	Rural	Urban	Low	Medium	High
PT (log)	-0.039***	-0.024***	-0.028***	-0.027***	-0.027***	-0.029***	-0.026***
	[0.005]	[0.004]	[0.004]	[0.006]	[0.005]	[0.005]	[0.008]
Obs.	1,944	2,003	2,671	1,276	1,886	1,296	765
R-squared	0.284	0.450	0.286	0.411	0.363	0.322	0.225
Prov. D.	Y	Y	Y	Y	Y	Y	Y
Dem. C.	Y	Y	Y	Y	Y	Y	Y
Econ. C.	Y	Y	Y	Y	Y	Y	Y
Lang. C.	Y	Y	Y	Y	Y	Y	Y
Relig. C.	Y	Y	Y	Y	Y	Y	Y

Note: This table reports OLS estimates of the elasticity of *democratic values* to *past terrorism* (abbreviated PT) in the different subsamples identified on the top of each column: males, females, rural and urban population, and individuals with low, medium and high education (i.e., with up to 5, between 6 and 10, and more than 10 years of education). In all columns, the specification of included controls is the same as in column 6 of Table 3 (with obvious abbreviations for the sake of space). Robust standard errors (clustered at district level) are presented in brackets. $***p < 0.01$, $**p < 0.05$ and $*p < 0.10$.

In all subsamples, the estimated elasticity is negative and highly significant. Even its magnitude is virtually the same across subsamples, with the only exception of a difference between genders: the democratic values of males are more elastic to terrorism than those of females.

The gender difference in elasticity is sizable in magnitude: a one-s.d. increase in exposure to past terrorism is associated to a reduction in support for democratic values by 2/5 of a s.d. among males and by 1/5 of a s.d. (that is half as much) among females. A possible explanation is that males are more exposed to terrorism than females, because they attend more frequently public places.[17] Alternatively, it is possible that the two genders trade off differently democratic rights

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[16]Repeating the analysis with all the specifications considered in Table 3 invariably confirms the results.

[17]Female and male labor force participation rates in 2009 were 24.1% and 81.7%, respectively (WDI, 2015). The Election Commission of Pakistan (ECP) does not report electoral turnout by gender, but media reports during

for security, with women less prone than men to see reductions in democracy as a good response to higher insecurity. Finally, it is possible that males are more exposed to terrorism than females not much (or not only) for a different risk of victimization, but rather (or also) for a higher exposure to the news on terror. As we argue below, the explanation based on gender differences in the trade-off between security and democracy appears as the most supported by the data.

Possibly more surprising than gender heterogeneity is the homogeneity of the effect across rural/urban and educational subsamples. First, rural and urban areas are profoundly different in Pakistan, in particular in terms of exposure to terrorism: while about 65% of the population lives in rural municipalities, and 43.7% of the labor force is employed in agriculture (Economic Survey, 2013), terrorist attacks are roughly three times more frequent in urban than in rural areas, and almost half of them are concentrated in districts with 100% urbanized municipalities. By targeting urban municipalities, terrorists may take advantage of higher population density and higher media coverage. The risk of becoming a victim of terrorism is thus lower in rural than in urban areas. This makes it intriguing that the elasticity of democratic values to terrorism is the same in both areas. One possible explanation is that the effect of terrorism on institutional preferences does not just work through the direct fear of becoming a victim, but also through a more general sense of insecurity, which is spread by the media across the country. If this interpretation were correct, gender heterogeneity in the effect of terrorism might be better explained by either a different way of trading off democratic rights for security or by a different exposure to the mass media than by gender differences in the risk of victimization.

Finally, even across educational levels terrorism has the same effect on democratic values. If one expects more educated people to react differently, this is a surprising result. At the same time, it is possible that education only makes a difference at very high levels, which are relatively infrequent in Pakistan, so that such effect does not appear.

election days clearly show that it is lower among women than among men (Freedom House, 2014).

6 Terrorism, Media Exposure and Household Income

6.1 Terrorism and Media Exposure

In this section we investigate the role of media exposure and of household income in determining the relationship between terrorism and democratic preferences. Several social scientists, political economists and defense analysts argue that media exposure in its various forms (electronic and print media, social media and communicative devices like cell phones) plays a significant role in the promotion of terrorist activities (Nacos, 2002; Lewis, 2005; Rohner and Frey, 2007; Seib and Janbek, 2010; Hoffman, 2013, among others). For instance, Hoffman (2013) argues that "without the media's coverage, the [terrorist] act's impact is arguably wasted, remaining narrowly confined to the immediate victim(s) of the attack, rather than reaching the wider 'target audience' at whom the terrorists' violence is actually aimed."[18]

If these concerns are right, media coverage may actually spread fear, amplify terrorists' message and make terrorism more effective. If media-induced fear raises demand for security and lowers demand for democracy, we should expect the elasticity of democratic values to terrorism to be higher for individuals with higher exposure to the media.

To investigate this possibility, the first two columns of Table 7 replicate the regression in column 6 of Table 3, adding *media exposure* and its interaction with *past terrorism* to the set of controls. *Media exposure* is an average of five dummies: for watching international news channels, accessing the Internet, and for possession of a TV, a computer and a cell phone. Column 1 shows that *media exposure* is positively associated to democratic support and that its inclusion leaves the coefficient of *past terrorism* unchanged in sign, magnitude and significance. Column 2 shows that the interaction between *media exposure* and *past terrorism* has a positive and significant coefficient, implying that individuals with a higher exposure to the media display a lower elasticity (in absolute value) of *democratic values* to *past terrorism*, rather than a higher one (recall that the elasticity is negative).

This evidence runs against the previously mentioned conjecture and thus supports a reassuring view on the role of the media: while exposure to the media brings more information in general, and on terrorist attacks in particular, our finding that it is associated to a lower propensity to give

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[18]Related research also reveals a significant positive relationship between the use of media and political mobilization and information transmission, particularly during election campaigns (Berelson, 1954; Drew and Weaver, 1998; Tolbert and McNeal, 2003; Eveland Jr et al., 2005; Dalrymple and Scheufele, 2007).

up democratic rights in response to the experience of terrorism runs against the idea that media coverage makes terrorism more effective. As a caveat, one should notice that the experience of terrorism refers to the district of residence. Our findings are thus compatible with the possibility that individuals with higher media exposure respond less to attacks in their own district and more to the country level of terrorism. Unfortunately, with cross-section data we cannot exploit variability in country-level terrorism. It remains the fact that responsiveness of democratic attitudes to terrorism in the district of residence decreases with media exposure.

The *media exposure* variable is an index summarizing information on several aspects. Part of this information, in particular regarding possession of TV, computer and cell phone, is also captured by the wealth measure, which also reflects possession of cars, air conditioning, home outdoor space and street lamps, and which was already included in the baseline specification. Part of the information, concerning whether the respondent watches international news channels and goes on line to access the Internet, is instead entirely new. Column 3 focuses on these aspects and substitutes *international news* and *internet* (two dummies) for *media exposure*, together with the respective interactions with *past terrorism*. Curiously, individuals watching international news channels attribute more importance to democracy than the average, while those accessing the Internet less importance than the average. More interestingly, the coefficient of the interaction with *past terrorism* is positive and significant for both *international news* and *internet*.[19] This suggests that individuals with access to more international and open sources of information are indeed less responsive to the experience of terrorism at the local level.

6.2 Terrorism and Household Income

The economic literature has documented that terrorism and civil conflict impose significant economic costs on different sectors of the economy. Terrorism and violence reduce tourism, foreign direct investment, trade, transportation and telecommunication, etc. (Abadie and Gardeazabal, 2003; Chen and Siems, 2004; Frey et al., 2007; Guidolin and La Ferrara, 2007; Sandler and Enders, 2008), to mention a few effects. Some studies have also found a significant positive correlation

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[19]Separately including three dummies for possession of TV, computer and cell phone, as well as their interaction with *past terrorism*, among the controls, shows that these interaction terms, as well as that of *international news*, are not individually significantly different from zero, whereas the interaction between *internet* and *past terrorism* remains significantly positive. These results are not reported but are available upon request.

Table 7: Terrorism, Media Exposure and Democratic Values

	(1)	(2)	(3)
Past Terrorism (log)	-0.030***	-0.038***	-0.033***
	(0.003)	(0.004)	(0.004)
Media Exposure	0.079***	0.022	
	(0.016)	(0.022)	
Media*Terrorism		0.022***	
		(0.006)	
International News			0.049***
			(0.010)
Internet			-0.048**
			(0.022)
News*Terrorism			0.006*
			(0.003)
Internet*Terrorism			0.018***
			(0.005)
Observations	3,947	3,947	3,947
R-squared	0.301	0.303	0.320
Province Fixed Effects	Y	Y	Y
Demographic Controls	Y	Y	Y
Language Controls	Y	Y	Y
Religious Controls	Y	Y	Y

Note: This table reports OLS estimates. The dependent variable is *democratic values*. In each column, few variables are added, and reported together with *past terrorism*, to the specification of included controls of column 6 of Table 3. Column 1 adds *media exposure*, column 2 further adds its interaction with *past terrorism*, and column 3 replaces *media exposure* and its interaction with *past terrorism* with the two variables *international news* and *internet* and their respective interaction with *past terrorism*. Robust standard errors (clustered at district level) are presented in brackets.

$***p < 0.01$, $**p < 0.05$ and $*p < 0.10$.

between economic development and liberal democratic norms.[20] Acemoglu et al. (2008) find that controlling for country fixed effects removes the statistical association between income per capita and various measures of democracy. Cervellati et al. (2014) show that this average result masks a heterogeneous effect of income on democracy: negative for colonies and positive for non-colonies. In light of this literature, it is far from obvious how we should expect that terrorism in Pakistan affects democratic attitudes through its negative effect on income, and it is certainly interesting to look at sub-national level evidence. We thus investigate whether the sensitivity of democratic attitudes to terrorism depends on income.

Table 8 tackles this question. Column 1 replicates the regression in column 6 of table 3, highlighting, besides that of *past terrorism*, the coefficients of *household income* and of *wealth*. These two regressors were already included in the baseline specification, although their coefficients were not displayed. *Household income* is positively and significantly associated with *democratic values*. It is tempting, although not rigorous, to say that democratic rights are normal goods. The association of *democratic values* with *wealth* is instead significantly negative. This remains true throughout the specifications of columns 2 to 4, which add the interaction of these two regressors with *past terrorism*, one at a time and then together. The interaction of *past terrorism* with *household income* is always positive and significant; that with *wealth* is always positive, but it becomes not significant in the last specification. The broad message is that higher household income or wealth reduce the sensitivity of democratic attitudes to terrorism. A possible interpretation is that they make more self-protection tools available and reduce the risk of victimization. Alternatively, it may be the case that households at different income or wealth levels trade off differently democratic rights for security.

7   Discussion and Concluding Remarks

In this section we summarize and discuss our findings. We have investigated the institutional legacy of persistent exposure to terrorism by studying its impact on individual attitudes towards

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[20]For instance, the positive statistical association between higher income per capita and democracy is the cornerstone of the influential modernization theory (Lipset, 1959). The hypothesis that higher income per capita leads countries to become democratic is also supported by Rueschemeyer et al. (1992), Huntington (1993) and Barro (1999). On the basis of these ideas, one might conjecture that terrorism reduces income, and that lower income leads to lower support for democracy.

Table 8: Terrorism, Income and Democratic Values

	(1)	(2)	(3)	(4)
Past Terrorism (log)	-0.030***	-0.038***	-0.036***	-0.040***
	(0.003)	(0.004)	(0.005)	(0.005)
Household Income	0.004***	0.002***	0.004***	0.002***
	(0.000)	(0.001)	(0.000)	(0.001)
Wealth	-0.054***	-0.054***	-0.090***	-0.073***
	(0.015)	(0.015)	(0.024)	(0.024)
Income*Terrorism		0.001***		0.001***
		(0.000)		(0.000)
Wealth*Terrorism			0.014*	0.007
			(0.008)	(0.008)
Observations	3,947	3,947	3,947	3,947
R-squared	0.297	0.299	0.297	0.299
Province Fixed Effects	Y	Y	Y	Y
Demographic Controls	Y	Y	Y	Y
Language Controls	Y	Y	Y	Y
Religious Controls	Y	Y	Y	Y

Note: This table reports OLS estimates. The dependent variable is *democratic values*. Column 1 replicates the specification of column 6 of Table 3, but it also highlights the coefficients of *household income* and of the *wealth*. Columns 2 to 4 add their interaction with *past terrorism*, first one at a time and then together. Robust standard errors (clustered at district level) are presented in brackets.

$***p < 0.01$, $**p < 0.05$ and $*p < 0.10$.

democracy. We have exploited information on political attitudes from a micro survey conducted on 6,000 respondents in Pakistan in 2009, together with district-level information on exposure to terrorism between 2004 and 2008. We have found that, controlling for a number of individual and district characteristics, persistent exposure to terrorism is associated to a significantly lower support for democratic values. Our baseline evidence shows that a one-s.d. increase in terrorist attacks in a district is associated to a reduction in individual support for liberal democratic values by 3-5% (1/4 to 1/3 of a s.d.), depending on the specification. Similar results hold for different measures of democratic preferences, as well as for past and contemporary exposure to terrorism and violence.

Our favorite interpretation is that exposure to terrorism and violence raises demand for security and lowers demand for democracy. It thus has a negative institutional legacy in terms of a country's chances to keep a democratic system. Pakistan, which has an elected government since 2008, has fluctuated between democracy and dictatorship with a decade frequency over the last 60 years. To the extent that results from Pakistan can be applied to non-democratic countries, one might conclude that terrorism also reduces the chances of democratic transitions.

Our evidence may appear surprising in light of the finding by Fair et al. (2014) that at the individual level support for democracy and for groups that commit terrorist attacks are positively correlated. There are at least two ways, not mutually exclusive, to reconcile these findings. The simplest one is to think that terrorist attacks in a district reduce both support for democracy and for militant groups. The positive correlation in the two sets of values at the individual level and the negative association we find between district-level terrorist attacks and democratic values would thus be perfectly compatible. Alternatively, support for militant groups and exposure to terrorist attacks may be unrelated or negatively related due to heterogeneity in militant groups and in their geographic scale of operation.[21] It will be interesting to investigate these aspects more in depth in future research.

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[21]Some groups are mainly motivated by outward-looking ideals and are more likely to perpetrate terrorist attacks outside Pakistan. The Kashmiri tanzeems and the Afghan Taliban aim at the liberation of Kashmir from India and of Afghanistan from Western occupation, respectively. Their proclaimed ideals of freedom and self-determination have some overlap with democratic rhetoric. Their attacks are not carried out within the country, where they are regarded as freedom fighters. Fair et al. (2014) show that the association between support for these groups and for democracy is positive and significant, and the same is true for al-Qaeda, which fights an international war, although in this case the correlation is smaller. For other groups, such as the Pakistani Taliban and the sectarian tanzeems, which have more inward-looking objectives and are more likely to operate on a local scale, there is either no information or the association between support for them and for democracy is not significantly different from zero.

We have also considered alternative, non-causal interpretations for the robust negative statistical association between democratic values and exposure to terrorism that we document. The survey data we use force us to a cross-sectional analysis, and this makes endogeneity a particularly serious issue, which we have addressed in a number of ways. Omitted variable concerns are attenuated by the fact that our baseline results are robust to the inclusion of different sets of control variables, as well as to different sample splits based on gender, urbanization and education level. As for reverse causation, democratic preferences are measured at the individual level, whereas past exposure to terrorism and violence are at the district level and refer to the previous five years, so they are clearly pre-determined. Yet, reverse causation might still drive our results if political preferences were persistent and affected the choice of terrorists' targets. Reverse causation is presumably a more serious concern for terrorism than for violence in general, as the latter does not involve an explicit choice of target that might be related to democratic preferences. Thus the robustness of our results to both terrorism and violence also attenuates concerns for reverse causation. Admittedly, this argument is not conclusive, and the issue deserves further attention.

Two of the arguments presented in Section 4 imply that terrorists may attack more frequently more democratically oriented districts. One reason is that they may find higher support in the population, in line with the evidence by Fair et al. (2014), but as pointed out above we do not really know whether that is the case. Another reason, which seems intuitively plausible although again it is not supported by evidence, is that terrorists (at least some of them) may aim at undermining democratic systems whose outcomes they do not like. Whatever the reason, if they preferentially target more democratic districts, one should expect a positive correlation, driven by reverse causation, between democratic values and terrorism, but since we find a negative one, its causal interpretation is reinforced.

More troublesome for causality is the possibility that terrorists preferentially target less democratic districts. While we are not aware of evidence supporting this view, it is also hard to discard it on a priori grounds. To address this possibility, as well as the other potential sources of endogeneity, we have followed an instrumental variable strategy based on instrumenting terrorism and violence by the distance from the Pak-Afghan border and by religious fractionalization, respectively. Such analysis, reported in the Online Appendix, confirms our baseline results, further supporting our preferred interpretation. At the same time, since the validity of the exclusion restriction may be

defended, but admittedly not beyond any reasonable doubt, we refrain from strong causality claims. We hope for the future to be able to rely on panel data for a more convincing identification, but at present it is not available.

In our investigation by subsamples we have detected a gender difference: the democratic values of males are more elastic to terrorism than those of females. We have considered a few possible explanations: males may be more exposed to terrorism than females, through either a higher risk of victimization or a higher exposure to the news, or they may trade off differently democracy for security. Since we detect no difference in the response to terrorism between urban and rural areas, and since the risk of victimization is substantially higher in the former than in the latter, we tend to discard the explanation based on victimization risk. Moreover, since the elasticity of democratic values to terrorism decreases with media exposure, and since men are more exposed to the media than women, differences in media exposure would tend to make the democratic attitudes of males less sensitive to terrorism than those of females, but since we find the opposite, we also tend to discard the explanation based on exposure to terrorism through the news. Our preferred interpretation is thus that the two genders trade off differently democracy for security, with males more prone to give up democratic rights in the face of terror than females.

The result on media exposure is particularly interesting in light of the fear that coverage by the news actually helps spreading terrorists' message and makes terrorism more effective. Our evidence speaks to the contrary: individuals with more access to the media are less responsive to terrorism. This result must be qualified in two ways: it refers to the response in terms of democratic attitudes, and not of other preferences or behavior, and it refers to terrorism in the district of residence, leaving open the possibility that news exposure reduces sensitivity to local events but raises responsiveness to distant ones. Even with this qualification, our evidence runs against the above mentioned fear that news coverage raises terrorism effectiveness.

We also find that the elasticity of democratic values to terrorism decreases with household income and wealth, possibly because they make more self-protection tools available, such as private guards at home or at work, whereas it does not vary with individual education.

By showing that individuals exposed to terrorism and violence are less supportive of liberal democratic institutions, our contribution complements Voors et al. (2012), who find that individuals exposed to violence are more altruistic, risk-seeking and impatient. An interesting avenue of future

research is to investigate how these different effects interact with one another and shape individuals and countries' ability to cope with terrorism and violence at the economic and institutional level.

Acknowledgements

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Online Appendix to

"Terrorism Risk and Democratic Preferences in Pakistan"

An Instrumental Variable Approach

Instruments

In this appendix we provide evidence that our baseline results on the effects of terrorism and violence on democratic values are robust to an instrumental variable approach aimed at tackling potential endogeneity. As explained in the main text, *past terrorism* and *past violence* are measured at the district level and refer to the five years previous to the measure of *democratic values*, which is at the individual level. So not only the explanatory variables are clearly pre-determined, but the inclusion of a long list of controls reduces omitted variable concerns; reverse causation is unlikely to be an issue for violence; and if terrorism preferentially targets more democratic districts, then the causal interpretation of our baseline results is even reinforced. Yet, it is also conceivable that terrorists concentrate their activities in less liberal districts, or that terrorism and violence are endogenous to democratic attitudes due to omitted variables or measurement errors. We tackle these possibilities through an instrumental variable identification strategy.

We use distance of a district from the Pak-Afghan border (*Durand Line*) as an instrument for terrorism as terrorist organizations have safe havens in the impervious mountainous terrain along the border with Afghanistan due to the high cost of state policing (Jones and Fair, 2010; Johnston and Sarbahi, 2013). Districts closer to the Pak-Afghan border are easy targets for terrorists as compared to distant districts (see figure 2c). The identifying assumption is that the variable of distance affects only the distribution of terrorism, and does not have an impact on democratic preferences. If this assumption is considered further, one can argue that distance from the Durand Line can affect political preferences through socio-economic and religious heterogeneity across districts. Yet, notice that all provinces and districts are governed by the same laws, have Muslim majority population and speak different languages, irrespective of distance from the Durand Line. Moreover, we include province dummies and several controls for socio-economic, cultural and religious characteristics, making the exclusion restriction more plausible.

We use religious fractionalization (*fractionalizaion*, the complement to one of the Herfindahl-

Hirschman Index of religious concentration based on district-level different religious sects and subsects within Islam) as an instrument for violence.[22] There exists a large number of religious Muslim sects and subsects in Pakistan, due to different interpretations of the Sharia. Districts with higher religious fractionalization have a higher probability of religious and communal conflict (Esteban and Ray, 2008, 2011; Esteban and Mayoral, 2011; Esteban et al., 2012). Different interpretations of the Sharia law do not explicitly discuss modern political and democratic processes. Moreover, conditioning on a wide set of controls, the exclusion restriction is likely to hold.

IV Regression Results

Table 9 reports IV regression results, using the same specifications of table 3 for included controls. The dependent variable is *democratic values*. Panel A presents results for terrorism, instrumented with distance from the Pak-Afghan border. The first stage provides evidence of a statistically significant negative association between distance from the Durand Line and frequency of terrorist attacks. The second stage coefficient of terrorism is similar in sign and significance to the one found in our baseline regressions, although it now tends to be higher in magnitude than in table 3. A one-s.d. increase in distance-predicted terrorist attacks decreases support for democratic values by 7-14%, that is between 45% and 85% of a s.d..

Panel B presents results for violence, instrumented by religious fractionalization. The first stage shows that religious fractionalization is a relevant determinant of violence in Pakistan. The estimated coefficient of violence in the second stage has the same sign and significance as in the baseline regression of column 2 of table 5. A one-s.d. increase in past aggregate violence in the district of residence lowers support for democratic values by 4-14%, that is between 22% and 85% of a s.d..

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[22]The summary statistics of *Durand Line* and *fractionalization* are given in table 2.

Table 9: Terrorism, Violence and Democratic Values: IV Estimations

	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Instrumenting Past Terrorism with Distance from the Durand Line						
First Stage						
Durand Line (log)	-0.460***	-0.341***	-0.451***	-0.620***	-0.632***	-0.595***
	[0.077]	[0.065]	[0.062]	[0.070]	[0.069]	[0.068]
F-test	54.62	27.38	64.15	86.99	91.30	83.61
Second Stage						
Past Terrorism (log)	-0.059***	-0.046***	-0.046***	-0.074***	-0.072***	-0.087***
	[0.003]	[0.002]	[0.002]	[0.019]	[0.020]	[0.020]
Observations	5,626	5,626	5,626	4,568	4,568	4,526
R-squared	0.036	0.174	0.176	0.248	0.251	0.231
Panel B: Instrumenting Past Violence with Religious Fractionalization						
First Stage						
Fractionalization	0.314***	0.154*	0.136*	0.135*	0.148*	0.156*
	[0.108]	[0.081]	[0.080]	[0.081]	[0.082]	[0.083]
F-test	13.33	17.00	16.91	15.52	16.26	6.42
Second Stage						
Past Violence (log)	-0.024***	-0.090***	-0.090***	-0.089***	-0.091***	-0.067***
	[0.003]	[0.005]	[0.005]	[0.006]	[0.006]	[0.006]
Observations	5,626	5,626	5,626	5,626	5,626	5,547
R-squared	0.002	0.05	0.052	0.055	0.049	0.124
Specification (both panels)						
Province Fixed Effects	N	Y	Y	Y	Y	Y
Demographic Controls	N	N	Y	Y	Y	Y
Economic Controls	N	N	N	Y	Y	Y
Language Controls	N	N	N	N	Y	Y
Religious Controls	N	N	N	N	N	Y

Note: This table reports IV estimates. The dependent variable is the log of the additive index of individual democratic values in 2009 (*democratic values*). In Panel A the explanatory variable is the log of the number of terrorist attacks in a district in 2004-2008 (*past terrorism*). The excluded instrument is the log of the distance of a district from the Pak-Afghan border (*Durand Line*). The top part of Panel A reports the first stage regression, the bottom part the second stage. In Panel B the explanatory variable is the log of the number of violence incidents in a district in 2004-2008 (*past violence*). The excluded instrument is the Herfindahl-Hirschman Index of religious concentration (*fractionalization*), based on the different sects and subsects of Islam within a district. The top part of Panel B reports the first stage regression, the bottom part the second stage. The bottom part of the table reports, for both panels, the control variables included in the specification of each column. Demographic controls include gender, marital status, rural/urban, age, age-square and formal education level. Economic controls include income, occupation, wealth, multiple deprivation index, perceptions on land reforms, inequality, income comparison with neighbors and financial comparison with the past. Language controls are dummies for the five main languages spoken across Pakistan. Religious controls include sect type, number of prayers, recitation of the holy book, frequency of recitation and current role of the Sharia's law. Robust standard errors (clustered at district level) are presented in brackets.
$***p < 0.01$, $**p < 0.05$ and $*p < 0.10$.