**British Journal of Political Science**

**Cyber Terrorism and Public Support for Retaliation –**

**A Multi-Country Survey Experiment**

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**Online Appendix A: Pilot Experiment to Verify Effectiveness of Video Manipulations**

The objective of this pilot research design was to validate a sophisticated experimental design that broadcast professionally produced television news clips purporting to show a breaking news report about different types of terror attacks in three different countries. Like in the main experiment, we randomly assigned respondents to one of five conditions in a 2X2 experimental design including a control group. The experimental manipulation relied on original video clips that broadcast scripted, edited and professionally produced news stories showing various forms of terror attacks on railway infrastructure. The video manipulations differed on the type of terror attack (cyber terror vs. kinetic terror) and the consequence of the terror attack (fatalities vs. no fatalities). (See online appendix B for a complete script and screenshots). The news clips purported to broadcast on local news stations in the three countries - NBC News in the United States, Sky News in the United Kingdom and Channel 2 in Israel. The clip and news story was identical in each country, adapted only to refer to local cities and railway companies, and with the relevant introductory special alert animation and logo of the broadcaster. Every other element remained identical including the background scenery and news presenter.

We ran the survey-experiment simultaneously over a three day period from August 30 to September 3, 2018. The survey was distributed using three Internet survey platforms (Amazon Turk, Prolific and Midgam) in the US, UK and Israel respectively (n = 60 in each of the three countries, 180 in total). The study participants represented a cross study of the general population in each country US: (*N=60,* Mage*= 35* year*s, SD =9.25)*; UK: *N=60*, Mage*= 33* years*, SD =* 10.42) and Israel, (*N=60,* Mage = 37, *SD* = 13.12). The distribution of the political orientation of the sample in Israel skewed more right wing than the US and UK, and the UK sample had a higher portion of female respondents than the US and Israel.

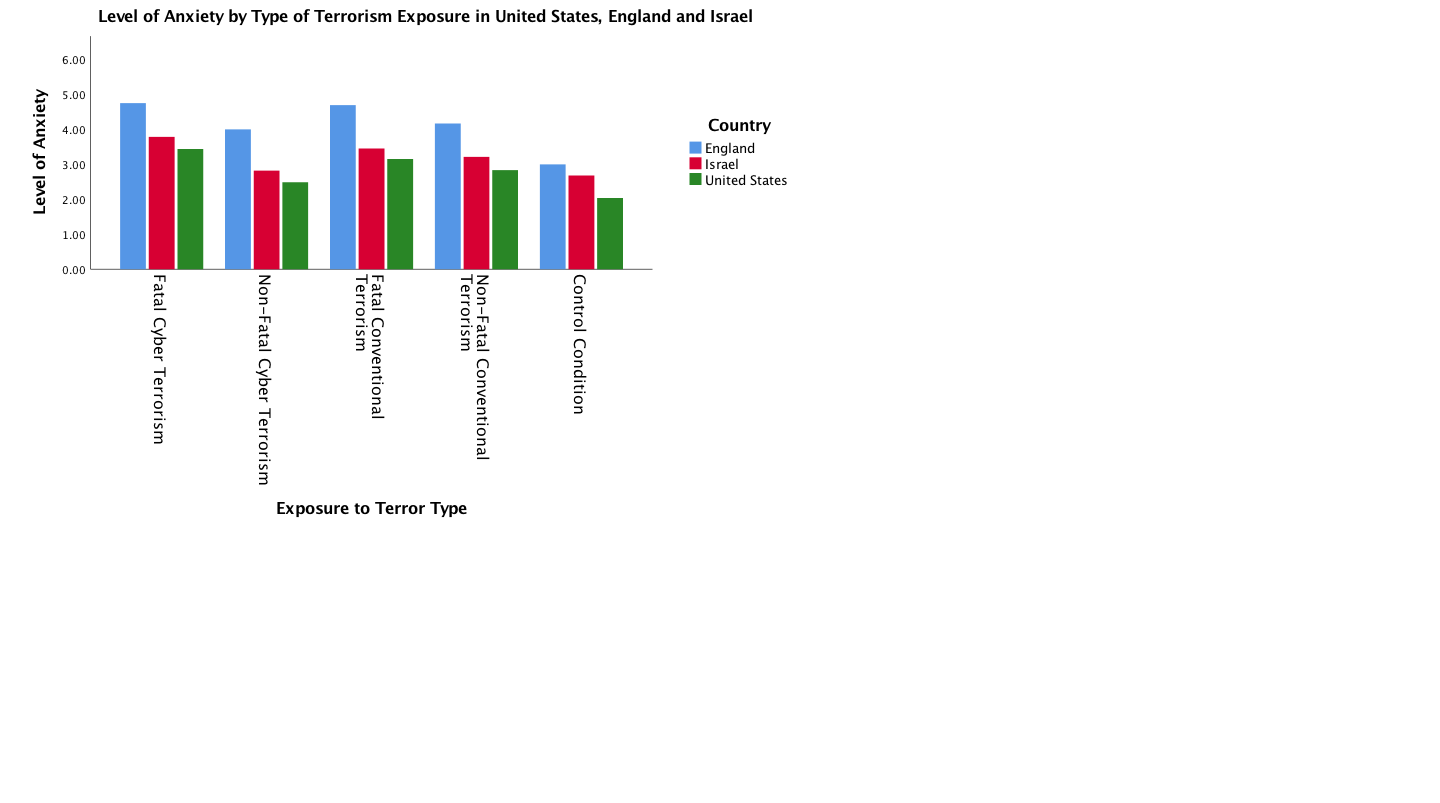
After viewing the manipulation, respondents completed a detailed questionnaire exploring their emotional state, political attitudes and demographic information. The dependent variable of interest in this pilot study was level of anxiety. We selected this variable for this initial experiment to validate the effectiveness of the manipulation due to our desire to focus on individual-level responses that highlight the human dimension of terrorism. Terrorism has been shown to aggravate feelings of anxiety due to intensified feelings of vulnerability (Huddy et al. 2005; Neria, DiGrande and Adams 2011; Silver et al. 2002), and later research has reinforced the cyber terrorism causes similar anxiety responses to conventional terrorism (Gross, Canetti and Vashdi 2017). Furthermore, anxiety is an automated response to relevant stimuli, which offers support for the fact that the manipulation is stimulating something that can shift individual political attitudes. As part of the informed consent process, we excluded any respondents who had been diagnosed with PTSD symptoms or who had experienced any trauma during the preceding two years.

Anxiety was measured using the short form Spielberger state-anxiety inventory-6 (Marteau and Bekker 1992; Spielberger 1970). This commonly used six-item index measures both state (extrinsic) and trait (intrinsic) anxiety. Respondents were asked to rate on a scale of 1–6 (1 = not at all; 6 = absolutely) the extent to which their feelings ‘at the moment’ correspond to different items. Half of the items represent negative feelings and emotions (e.g. ‘I feel upset’, ‘I feel worried) and the other half represent positive feelings and emotions (e.g. ‘I feel relaxed’, ‘I feel content). Cronbach’s alpha coefficients were 0.88. Covariates included age, gender, level of education, political self-identification, family income, average daily Internet usage, computer literacy and usage of public transportation.

Results

The results of this experiment validate our manipulation and show that our professionally produced television news clips purporting to show breaking news reports about different types of terror attacks are able to produce significant variance in emotional responses across the three countries. (This variance is reflected in Figure A.1). To confirm this effect, we ran a series of three OLS regression analyses – one for each of the three countries. (See Table A.1). As described above, the dependent variable was level of anxiety reported following exposure to news reports of various terror attacks. The different models show the country-level effects of each terror condition (coded as four dummy variables) as compared to the control group. The full battery of demographic control variables listed above was included in the model to account for political orientation, age, gender, digital knowledge and more. First and most importantly, the findings indicate that each of the types of terror news reports predicts a significantly different level of anxiety compared to the terror group (fatal cyber terror: = .471, p < .000; non-fatal cyber terror: = .231, p < .021; fatal conventional terror: , p < .000; non-fatal conventional terror: = 310, p < .002). This effect can be viewed on a collective basis and equally among the individual countries. This serves the purpose of validating our research design – corroborating the effectiveness of the manipulation in causing attitudinal shifts in different countries - and allowing us to continue to the subsequent large-N experiment that looks more closely at the variance in policy preferences caused by different types of terrorism.

**Figure A.1: Levels of Anxiety by Exposure to Terror Conditions for United States, England and Israel**

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**Table A.1. OLS regression models of support for retaliation**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **(1)** | **(2)** | **(3)** | **(4)** |
|  | **--------** | **--------** | **--------** | **--------** |
|  | **Three Countries** | **U.S.** | **U.K.** | **Israel** |
| Cyber Terror (Fatal) Condition – Dummy Variable | .471\*\*\*  [.000] | .456\*\*  [.006] | .555\*\*  [.002] | .408  [.172] |
| Cyber Terror (Non-Fatal) Condition – Dummy Variable | .231\*  [.021] | .213  [.150] | .333  [.060] | .178  [.569] |
| Conventional Terror (Fatal) Condition – Dummy Variable | .399\*\*\*  [.000] | .367\*  [.018] | .516\*\*  [.003] | .660  [.074] |
| Conventional Terror (Non-Fatal) Condition – Dummy Variable | .310\*\*  [.002] | .372\*  [.017] | .383\*  [.028] | .482  [.176] |
| Political Orientation (1 = very left wing, 7 = very right wing) | .024 [.774] | .222 [.087] | .027 [.851] | -.538 [.067] |
| Age | -.033 [.681] | -.117 [.353] | -.009 [.946] | .143 [.734] |
| Gender (0 = male; 1 = female) | .177\* [.032] | .133 [.302] | .015 [.918] | .062 [.796] |
| Previous Exposure to Terror Attacks (0 = no exposure, 1 = exposure) | -.108 [.183] | -.071 [.600] | -.121 [.352] | -.238 [.391] |
| Parental Status (0 = no children, 1 = children) | -.060 [.366] | -.213 [.110] | .039 [.801] | .171 [.708] |
| Country Dummies | Yes | No | No | No |
| Observations | 180 | 60 | 60 | 60 |
| R-Squared | .226 | .335 | .242 | .469 |
| Adjusted R-Squared | .167 | .119 | .088 | .035 |

*Note: regression coefficients with p-values in brackets.*

*\* p < 0.05; \*\* p < 0.01; \*\*\* p < 0.001*

**Online Appendix B: Script and Screenshots of Cyber and Conventional Terrorism News Clips**

Script of Fatal *Cyber Terror* and Fatal **Conventional Terror** Scenario

We are here live, in front of the (*Cyber*) Headquarters of the National Security Taskforce, and in just a few minutes we will be cutting to live coverage of the press conference with Dr. Henry Williams, chief of the (*cyber*) taskforce. According to initial reports, an unprecedented (*cyber*) terror attack has breached Amtrak’s security, causing a train to derail. At this time, police reports indicate that seven passengers, including children, were killed.  From the hospital in Cambridge we are told that another 10 passengers are critically wounded, with others being treated for serious injuries. Until further notice, all train services have been halted.

For those of you joining us, we can now report that several hours ago an unprecedented (*cyber*) terror attack was launched on the United States. As part of this attack, hostile parties successfully *hacked into a computer terminal* / **broke into a transport terminal**at Amtrak, causing / **and detonated an explosive device that caused**a train to derail. Again, 7 passengers are dead and 10 others critically injured after a train derailed following a deadly (*cyber*) attack on Amtrak.

Security forces inform us that officials have yet to identify the perpetrator of the attack, but that the resources required to pull off an attack of this scope would have to be considerable. Senior officials have confirmed that they will be working around the clock to identify the perpetrators and restore security. Until the press conference begins, back to you in the studio.

Script of Non-Fatal *Cyber Terror* and Non-Fatal **Conventional Terror** Scenario

We are here live, in front of the (*Cyber*) Headquarters of the National Security Taskforce, and in just a few minutes we will be cutting to live coverage of the press conference with Dr. Henry Williams, chief of the (*cyber*) taskforce. According to initial reports, an unprecedented (*cyber*) terror attack has breached Amtrak’s security, allowing attackers to steal the credit card details of hundreds of thousands of passengers. With reports still coming in, we are informed that the (*cyber*) attack successfully funnelled tens of millions of dollars into foreign accounts.

For those of you joining us, we can now report that several hours ago an unprecedented (*cyber*) terror attack was launched on the United States. As part of this attack, hostile parties successfully *hacked into a computer terminal* / **broke into a transport terminal**at Amtrak, **and detonated an explosive device***,* stealing the credit card details of hundreds of thousands of passengers. Again, tens of millions of dollars have been funnelled to foreign accounts following a (*cyber*) attack on Amtrak.

Security forces inform us that officials have yet to identify the perpetrator of the attack, but that the resources required to pull off an attack of this scope would have to be considerable. Senior officials have confirmed that they will be working around the clock to identify the perpetrators and restore security. Until the press conference begins, back to you in the studio.

*Note: The scripts above reflect the news clips that appeared to participants in the United States. Participants in England and Israel viewed clips where the name of the city / country / railway organization reflected local names. The rest of the script remained identical.*

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**Online Appendix C: Discussion of the advantages and shortcomings of the selected survey panels.**

The survey was distributed using three Internet survey platforms (Amazon Mechanical Turk, Prolific and Midgam) in the US, UK and Israel respectively. Each of the three platforms are Internet survey panels. Each of these organizations is well known and commonly used in electoral and academic surveys.

Of these platforms, Amazon Mechanical Turk (hereonin ‘MTurk’) has most famously dealt with a somewhat problematic reputation with regards to the proportionality of its participant pool. However we note that recent research has dispelled most of these urban myths (see for example Hauser and Schwarz 2016; Berinsky, Huber and Lenz 2012). While opt-in samples collected via MTurk should not be considered representative of the US population (nor for that matter should any opt-in survey panels that aren’t especially weighted for demographic representation), they have consistently outperformed laboratory-based convenience samples in ensuring variation across socio-demographic and political characteristics of interest (Berinsky, Huber and Lenz 2012).

Today, MTurk is frequently used in experimental research in the social sciences to obtain large and diverse samples than would otherwise be drawn from the convenience samples of college students that are typically used in this type of work (Berinsky, Huber, and Lenz, 2012). Experimental studies conducted on MTurk have been published in the most prominent outlets, including the British Journal of Political Science (Guess and Coppock 2018; Mildenberger and Tingley 2017), American Political Science Review (Aarøe, Petersen, and Arceneaux, 2017; McEntire, Leiby, and Krain, 2015), the American Journal of Political Science (Bishin, Hayes, Incantalupo et al., 2016; Huff and Kertzer, 2018), International Organization (Wallace, 2013; Chaudoin, 2014; Brutger and Kertzer, 2018) and others.

**Online Appendix D: Balance Checks for Each Terror Condition in United States, England and Israel.**

**Sample: United States, Experiment 2**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | Cyber Terrorism – Fatal (n = 118) | | |  | Cyber Terrorism – Non-Fatal (n = 121) | | |  | Conventional Terrorism – Fatal  (n = 121) | | |  | Conventional Terrorism – Non Fatal (n = 122) | | | | | | | Control Group  (n=125) | | |  |
| *Variable name* | | M | SD | range or  *n* (%) |  | M | SD | range or  *n* (%) |  | M | SD | range or  *n* (%) |  | M | SD | | | range or  *n* (%) | | | M | SD | range or  *n* (%) |  |
| Born (year) | | 1981 | 10.0 | [1947-1997] |  | 1981 | 10.8 | [1946-1998] |  | 1983 | 9.2 | [1954-1998] |  | 1983 | | 10.5 | | | [1948-1999] | | 1981 | 11.0 | [1948-1997] |  |
| Gender (%)  *Female*  *Male* | |  |  | 56 (48)  62 (52) |  |  |  | 53 (44)  68 (56) |  |  |  | 53 (44)  68 (56) |  |  | | |  | | | 56 (46)  66 (54) |  |  | 58 (46)  67 (54) |  |
| Marital status  *Single*  *In Relationship*  *Married*  *Divorced*  *Widowed* | |  |  | 33 (28)  11 (9)  69 (59)  5 (4)  0 (0) |  |  |  | 40 (33)  22 (18)  49 (41)  8 (7)  2 (2) |  |  |  | 31 (26)  29 (24)  55 (46)  6 (5)  0 (0) |  |  | | |  | | | 37 (30)  21 (17)  58 (48)  5 (4)  1 (1) |  |  | 37 (30)  23 (18)  54 (43)  7 (6)  4 (3) |  |
| Children | | 1.08 | 1.16 | [0-4] |  | 1.03 | 1.30 | [0-5] |  | 1.05 | 1.36 | [0-7] |  | .98 | | | 1.17 | | | [0-5] | 0.86 | 1.18 | [0-6] |  |
| Education  *Elementary*  *Secondary*  *Post-sec.*  *Bachelors*  *Masters / PhD* | |  |  | 0 (0)  21 (18)  24 (20)  57 (48)  16 (14) |  |  |  | 0  24 (20)  38 (31)  43 (36)  16 (13) |  |  |  | 0  25 (21)  24 (10)  55 (46)  17 (14) |  |  | | |  | | | 0  22 (18)  26 (21)  56 (46)  18 (15) |  |  | 0  26 (21)  22 (18)  57 (48)  20 (16) |  |
| Political Ideology  *Extremely right*  *Right*  *Slightly right*  *Center*  *Slightly left*  *Left*  *Extremely left* | |  |  | 6 (5)  22 (19)  11 (9)  26 (22)  15 (13)  24 (20)  14 (12) |  |  |  | 12 (10)  18 (15)  13 (11)  19 (16)  20 (17)  24 (20)  15 (12) |  |  |  | 7 (6)  21 (17)  23 (19)  21 (17)  15 (12)  21 (17)  13 (11) |  |  | | |  | | | 9 (7)  19 (16)  15 (12)  21 (17)  18 (15)  26 (21)  14 (12) |  |  | 6 (5)  34 (27)  10 (8)  27 (22)  9 (7)  26 (21)  13 (10) |  |
|  |
| Income  *Low*  *Much lower than average*  *A little lower than average*  *Average*  *A little higher than average*  *Much higher than average*  *High* | |  |  | 10 (9)  15 (13)  12 (10)  31 (26)  34 (29)  14 (12)  2 (2) |  |  |  | 7 (6)  25 (21)  11 (9)  24 (20)  38 (31)  16 (13)  0 (0) |  |  |  | 6 (5)  14 (12)  16 (13)  35 (29)  30 (25)  19 (16)  1 (1) |  |  | | |  | | | 7 (6)  13 (11)  16 (13)  34 (28)  34 (28)  16 (13)  2 (2) |  |  | 7 (6)  12 (10)  25 (20)  25 (20)  41 (33)  14 (11)  1 (1) |  |
| Previous exposure to terror-attacks | |  |  | .58 |  |  |  | .60 |  |  |  | .57 |  |  | | |  | | | .66 |  |  | .54 |  |
| Web knowledge | | 4.64 | 1.17 | [1.67-6] |  | 4.68 | 1.06 | [2-6] |  | 4.82 | 0.94 | [2.67-6] |  | 4.78 | | | 1.05 | | | [2-6] | 4.73 | 1.02 | [2.33-6] |  |
| Anxiety (STAI) | | 3.43 | 1.37 | [1-6] |  | 2.98 | 1.15 | [1-5.5] |  | 3.54 | 1.27 | [1-6] |  | 3.33 | | | 1.23 | | | [1-6] | 2.21 | .99 | [1-4.7] |  |
| Anger (STAXI) | | 2.71 | 1.76 | [1-6] |  | 1.91 | 1.13 | [1-5.5] |  | 2.69 | 1.60 | [1-6] |  | 2.60 | | | 1.54 | | | [1-6] | 1.54 | 1.16 | [1-5.75] |  |

**Sample: United Kingdom, Experiment 2**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Cyber Terrorism – Fatal (n = 120) | | |  | Cyber Terrorism – Non-Fatal (n = 119) | | |  | Conventional Terrorism – Fatal  (n = 118) | | |  | Conventional Terrorism – Non Fatal (n = 120) | | | | | | | Control Group  (n=120) | | |  |
| *Variable name* | M | SD | range or  *n* (%) |  | M | SD | range or  *n* (%) |  | M | SD | range or  *n* (%) |  | M | SD | | | range or  *n* (%) | | | M | SD | range or  *n* (%) |  |
| Born (year) | 1981 | 11.7 | [1954-2000] |  | 1982 | 11.9 | [1953-2000] |  | 1981 | 12.2 | [1953-2000] |  | 1982 | | 11.8 | | | [1953-1999] | | 1981 | 12.2 | [1953-2000] |  |
| Gender (%)  *Female*  *Male* |  |  | 71 (59)  49 (41) |  |  |  | 70 (59)  49 (41) |  |  |  | 75 (64)  43 (36) |  |  | | |  | | | 86 (72)  34 (28) |  |  | 80 (66)  40 (33) |  |
| Marital status  *Single*  *In Relationship*  *Married*  *Divorced*  *Widowed* |  |  | 42 (35)  31 (26)  47 (39)  0 (0)  0 (0) |  |  |  | 34 (29)  39 (33)  40 (34)  4 (3)  2 (2) |  |  |  | 35 (30)  34 (29)  46 (39)  3 (3)  0 (0) |  |  | | |  | | | 40 (33)  39 (33)  34 (28)  6 (5)  1 (1) |  |  | 34 (19)  45 (38)  44 (37)  7 (6)  1 (1) |  |
| Children | .91 | 1.14 | [0-5] |  | 1.02 | 1.49 | [0-11] |  | 1.03 | 1.15 | [0-4] |  | .95 | | | 1.29 | | | [0-8] | 1.08 | 1.31 | [0-6] |  |
| Education  *Elementary*  *Secondary*  *Post-sec.*  *Bachelors*  *Masters / PhD* |  |  | 0 (0)  32 (27)  26 (22)  49 (41)  13 (11) |  |  |  | 0  32 (27)  20 (18)  53 (45)  14 (12) |  |  |  | 0  41 (35)  26 (22)  36 (31)  15 (13) |  |  | | |  | | | 0  28 (23)  29 (24)  46 (38)  17 (14) |  |  | 0  26 (22)  38 (32)  40 (33)  16 (13) |  |
| Political Ideology  *Extremely right*  *Right*  *Slightly right*  *Center*  *Slightly left*  *Left*  *Extremely left* |  |  | 0 (0)  11 (9)  15 (13)  40 (33)  21 (18)  30 (25)  3 (3) |  |  |  | 0 (0)  8 (7)  10 (8)  35 (29)  22 (19)  37 (31)  7 (6) |  |  |  | 1 (1)  11 (9)  8 (7)  42 (36)  25 (21)  24 (20)  7 (6) |  |  | | |  | | | 0 (0)  7 (6)  15 (13)  46 (38)  26 (22)  25 (21)  1 (1) |  |  | 2 (2)  8 (7)  10 (8)  45 (38)  20 (17)  30 (25)  5 (4) |  |
| Income  *Low*  *Much lower than average*  *A little lower than average*  *Average*  *A little higher than average*  *Much higher than average*  *High* |  |  | 7 (6)  8 (7)  20 (17)  23 (19)  46 (38)  15 (13)  1 (1) |  |  |  | 7 (6)  7 (6)  15 (13)  26 (22)  47 (40)  17 (14)  0 (0) |  |  |  | 10 (9)  11 (9)  28 (24)  16 (14)  44 (37)  9 (8)  0 (0) |  |  | | |  | | | 9 (8)  16 (13)  18 (15)  26 (22)  30 (25)  21 (18)  0 (0) |  |  | 11 (9)  18 (15)  15 (13)  24 (20)  29 (24)  22 (18)  1 (1) |  |
| Previous exposure to terror-attacks |  |  | .59 |  |  |  | .55 |  |  |  | .54 |  |  | | |  | | | .48 |  |  | .54 |  |
| Web knowledge | 3.90 | 1.33 | [1-6] |  | 3.90 | 1.29 | [1.33-6] |  | 4.07 | 1.20 | [1.5-6] |  | 3.89 | | | 1.32 | | | [1-6] | 3.92 | 1.22 | [1.33-6] |  |
| Anxiety (STAI) | 3.31 | 1.10 | [1-6] |  | 2.90 | 1.01 | [1-5.5] |  | 3.44 | 1.14 | [1-6] |  | 3.22 | | | 1.02 | | | [1-5.83] | 2.39 | .88 | [1-5.17] |  |
| Anger (STAXI) | 2.04 | 1.30 | [1-6] |  | 1.68 | 1.02 | [1-6] |  | 2.32 | 1.51 | [1-6] |  | 2.09 | | | 1.30 | | | [1-5.75] | 1.23 | .47 | [1-3.5] |  |

**Sample: Israel, Experiment 2**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Cyber Terrorism – Fatal (n = 128) | | |  | Cyber Terrorism – Non-Fatal (n = 131) | | |  | Conventional Terrorism – Fatal  (n = 122) | | |  | Conventional Terrorism – Non Fatal (n = 125) | | | | | | | Control Group  (n=138) | | |  |
| *Variable name* | M | SD | range or  *n* (%) |  | M | SD | range or  *n* (%) |  | M | SD | range or  *n* (%) |  | M | SD | | | range or  *n* (%) | | | M | SD | range or  *n* (%) |  |
| Born (year) | 1980 | 13.7 | [1954-2000] |  | 1980 | 13.2 | [1955-2000] |  | 1979 | 13.1 | [1954-2000] |  | 1978 | | 13.4 | | | [1954-2000] | | 1979 | 12.6 | [1955-2000] |  |
| Gender (%)  *Female*  *Male* |  |  | 64 (50)  64 (50) |  |  |  | 73 (56)  58 (44) |  |  |  | 60 (49)  62 (51) |  |  | | |  | | | 62 (50)  63 (50) |  |  | 70 (51)  68 (49) |  |
| Marital status  *Single*  *In Relationship*  *Married*  *Divorced*  *Widowed* |  |  | 31 (24)  16 (13)  76 (59)  4 (3)  1 (1) |  |  |  | 36 (28)  12 (9)  66 (50)  17 (13)  0 (0) |  |  |  | 35 (29)  11 (9)  62 (51)  14 (12)  0 (0) |  |  | | |  | | | 18 (14)  12 (10)  80 (64)  14 (11)  1 (1) |  |  | 31 (23)  13 (9)  75 (54)  17 (12)  2 (1) |  |
| Children | 1.94 | 2.05 | [0-11] |  | 1.60 | 1.66 | [0-8] |  | 1.70 | 1.70 | [0-6] |  | 1.86 | | | 1.63 | | | [0-9] | 1.73 | 1.57 | [0-6] |  |
| Education  *Elementary*  *Secondary*  *Post-sec.*  *Bachelors*  *Masters / PhD* |  |  | 1 (1)  50 (39)  63 (49)  12 (9)  2 (2) |  |  |  | 4 (3)  53 (41)  60 (46)  13 (10)  1 (1) |  |  |  | 2 (2)  46 (38)  67 (55)  6 (5)  1 (1) |  |  | | |  | | | 3 (2)  44 (35)  59 (47)  19 (15)  0 (0) |  |  | 3 (2)  53 (31)  64 (46)  16 (12)  2 (1) |  |
| Political Ideology  *Extremely right*  *Right*  *Slightly right*  *Center*  *Slightly left*  *Left*  *Extremely left* |  |  | 6 (5)  40 (31)  32 (25)  31 (24)  11 (9)  7 (6)  1 (1) |  |  |  | 16 (12)  30 (23)  28 (21)  36 (28)  17 (13)  4 (3)  0 (0) |  |  |  | 9 (7)  29 (24)  22 (18)  43 (35)  13 (11)  6 (5)  0 (0) |  |  | | |  | | | 9 (7)  34 (27)  23 (18)  41 (33)  12 (10)  3 (2)  3 (2) |  |  | 6 (4)  40 (29)  20 (15)  47 (34)  14 (10)  10 (7)  1 (1) |  |
| Income  *Low*  *Much lower than average*  *A little lower than average*  *Average*  *A little higher than average*  *Much higher than average*  *High* |  |  | 24 (19)  21 (16)  27 (21)  28 (22)  15 (12)  12 (9)  1 (1) |  |  |  | 13 (31)  23 (18)  25 (19)  21 (16)  10 (8)  7 (5)  4 (3) |  |  |  | 31 (25)  28 (23)  11 (9)  34 (28)  11 (9)  5 (4)  2 (2) |  |  | | |  | | | 28 (22)  25 (20)  21 (17)  33 (26)  8 (6)  7 (6)  3 (2) |  |  | 38 (28)  29 (21)  13 (9)  40 (29)  12 (9)  5 (4)  1 (1) |  |
| Previous exposure to terror-attacks |  |  | .50 |  |  |  | .44 |  |  |  | .46 |  |  | | |  | | | .57 |  |  | .44 |  |
| Web knowledge | 3.75 | 1.34 | [1-6] |  | 3.99 | 1.33 | [1.5-6] |  | 4.01 | 1.28 | [1.67-6] |  | 3.94 | | | 1.35 | | | [1.33-6] | 3.96 | 1.28 | [1.5-6] |  |
| Anxiety (STAI) | 3.14 | 1.13 | [1-5.33] |  | 3.00 | 1.18 | [1-5.5] |  | 3.22 | 1.27 | [1-6] |  | 2.80 | | | 1.22 | | | [1-5.67] | 2.45 | .93 | [1-5.33] |  |
| Anger (STAXI) | 1.94 | 1.21 | [1-6] |  | 1.88 | 1.21 | [1-6] |  | 2.16 | 1.34 | [1-6] |  | 1.84 | | | 1.26 | | | [1-6] | 1.32 | .69 | [1-5.25] |  |

**Online Appendix E:**

**Analyses Relating to Post-Hoc Experiment to Test Control Condition Theory**

The results of the second experiment indicated that exposure to various news clips portraying vivid terror attacks *decreased* demands for retaliation compared to the control group who did not view the attack clips. Essentially, the support for retaliation in this control group was indistinguishable from the level of support of the conventional-fatal terror condition. We hypothesized that the high support for retaliation in the control group is explained by the fact that these respondents were asked to indicate their support for retaliation in response to an unviewed attack, that is, they were not exposed to any of the video manipulations. We anticipated that this absence of data evokes the worst possible scenarios (i.e. a high casualty conventional terror attack), explaining why the support for retaliation is so high.

To confirm this hypothesis, we ran a post-hoc analysis to test this theory with a new dataset (N=737 respondents among all three countries). Three participants were excluded for failing manipulation checks. After viewing the same video manipulations and completing a questionnaire about their support for retaliation, the participants were asked three questions that asked about how they perceived the retaliatory options.

1. Were you thinking about a particular type of attacker? (Available options were ‘I wasn’t thinking about a particular type of attacker’; ‘A terror organization’; ‘A foreign country’; ‘A criminal organization’; ‘A single person / lone-wolf’; ‘A local group inside my country’; ‘Other’.
2. Were you thinking about a specific attacker? (Available options were ‘I wasn’t thinking about a particular attacker’; ‘Iran’; ‘North Korea’; ‘ISIS / Al-Qaeda’; ‘Hamas / Hezbollah’; ‘Russia’; ‘China’; ‘Other’.
3. Were you thinking about an attack against the US / England / Israel with particular consequences? (Available options included ‘I wasn’t imagining a particular type of attack’; ‘A major attack causing 50+ deaths’; ‘A medium-sized attack causing 10-50 deaths’; ‘A small attack causing less than 10 deaths’; ‘An non-lethal attack that targeted financial, transportation or other infrastructure, but didn’t kill anyone’; Other’.

The results, separated by treatment condition, appear in table E1.

We postulated that having not been presented with any information about an attack, the question about retaliating would give rise to the worst-case scenario of a high casualty conventional terror attack. As such, we would expect to see limited or no differences between the answers given by the control group and the conventional-fatal terror conditions. To test this, we conducted a chi-square test to compare the observed results to the expected distribution between these two manipulation conditions. For the first question regarding the type of attacker, the chi-square analyses indicated that there was a significant difference between the control and conventional-lethal condition in at least one of the cells (χ2 (df = 6) = 17.05, p = 0.009). For the second question about the identity of the attacker, there was no significant difference between the two conditions (χ2 (df = 7) = 8.72, p = 0.274). For the third question asking about the consequences of the initial attack that prompted a retaliatory strike, the chi-square analyses indicated that there was a significant difference between the conditions in at least one of the cells (χ2 (df = 5) = 13.29, p = 0.021).

To understand where the differences can be found, we tested for the adjusted residual in each cell – a process that generates a Z-score for each cell relating to the difference between the expected and actual count. For the first question, asking about the type of attacker, the only significant differences between the two conditions was that the control group participants were more likely to think that the attacker was a foreign country (Count=44; Expected Count=32.1; Adjusted Residual=3.4; p<.001) and less likely to think that the attacker was a terror organization (Count=51; Expected Count=65.8; Adjusted Residual=-3.5; p<.000). For the third question, asking about the consequences of the initial attack that sparked the retaliation, the only significant difference between the two conditions was that the control group participants were less likely to think that the attack was a small attack causing less than 10 deaths (Count=9; Expected Count=16.1; Adjusted Residual=-2.7; p<.007).

These results support our inference that participants in the control condition, who were asked about attitudes towards retaliatory strikes following an unknown attack on their country, would imagine the most serious kind of attack. Their support for retaliation was equally as high as the group who viewed a news clip about a conventional and lethal terror attack by an unknown assailant. The only difference between the groups was that the control condition expected that the attacker would be a foreign country rather than an attacker, and that they were less inclined to believe that this was a minor attack causing only a small number of fatalities.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | | | | | | |
|  | | **Were you thinking about a particular type of attacker?** | | | | | | | Total |
| I wasn’t thinking about a particular type of attacker | A terror organization | A foreign country | A criminal organization | A single person / lone-wolf | A local group inside my country | Other |
|  | Cyber Lethal | 29 | 53 | 38 | 9 | 4 | 4 | 2 | 139 |
| Cyber Non-Lethal | 42 | 52 | 28 | 19 | 2 | 4 | 0 | 147 |
| Conventional Lethal | 35 | 76 | 18 | 5 | 7 | 3 | 1 | 145 |
| Conventional Non-Lethal | 45 | 61 | 18 | 15 | 5 | 2 | 1 | 147 |
| Control | 46 | 51 | 44 | 4 | 7 | 3 | 1 | 156 |
| Total | | 197 | 293 | 146 | 52 | 25 | 16 | 5 | 734 |

Table E1 – Results of Post-Hoc Questions to Test Control Condition Theory

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | | | | | | | |
|  | | **Were you thinking about a specific attacker?** | | | | | | | | Total |
| I wasn't thinking about a particular attacker | Iran | North Korea | ISIS / Al-Qaeda | Hamas / Hezbollah | Russia | China | Other |
|  | Cyber Lethal | 73 | 22 | 7 | 26 | 3 | 7 | 1 | 0 | 139 |
| Cyber Non-Lethal | 92 | 21 | 1 | 16 | 3 | 6 | 3 | 5 | 147 |
| Conventional Lethal | 77 | 11 | 1 | 32 | 14 | 6 | 1 | 3 | 145 |
| Conventional Non-Lethal | 84 | 14 | 2 | 18 | 14 | 9 | 2 | 4 | 147 |
| Control | 84 | 21 | 2 | 20 | 17 | 8 | 3 | 1 | 156 |
| Total | | 410 | 89 | 13 | 112 | 51 | 36 | 10 | 13 | 734 |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | **Were you thinking about an attack against the US with particular consequences?** | | | | | | Total |
| I wasn’t imagining a particular type of attack | A major attack causing 50+ deaths | A medium-sized attack causing 10-50 deaths | A small attack causing less than 10 deaths | An non-lethal attack that targeted financial, transportation or other infrastructure, but didn’t kill anyone | Other |
|  | Cyber Lethal | 69 | 20 | 24 | 14 | 12 | 0 | 139 |
| Cyber Non-Lethal | 81 | 16 | 5 | 4 | 41 | 0 | 147 |
| Conventional Lethal | 66 | 20 | 21 | 22 | 14 | 2 | 145 |
| Conventional Non-Lethal | 66 | 20 | 15 | 6 | 40 | 0 | 147 |
| Control | 87 | 21 | 13 | 9 | 25 | 1 | 156 |
| Total | | 369 | 97 | 78 | 55 | 132 | 3 | 734 |

**Online Appendix F: Mediation Analyses and Sensitivity Analyses**

*Information on meeting the sequential ignorability assumption required to effectively estimate the true mediation effect:*

The validity of ACME as an estimate of the true mediation effect relies on meeting the sequential ignorability assumption. This requires that the treatment and mediator variables avoid any correlation with error terms in either equations 1 or 2 (see Table 6). Since the experimental mechanism uses random allocation we need not concern ourselves with the fixed nature of the independent variable, although it is more difficult to meet the same threshold with our mediation variable. As Imai (2011) explains, no research design could unequivocally satisfy the sequential ignorability assumption. To address this as best as possible, we take two steps. First, we include possible pretreatment covariates that are known predictors of retaliatory attitudes in the mediation analyses (i.e. political orientation). Second, we conduct a sensitivity analysis (see below).

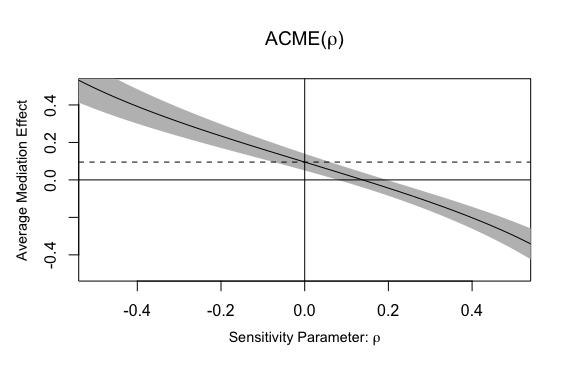
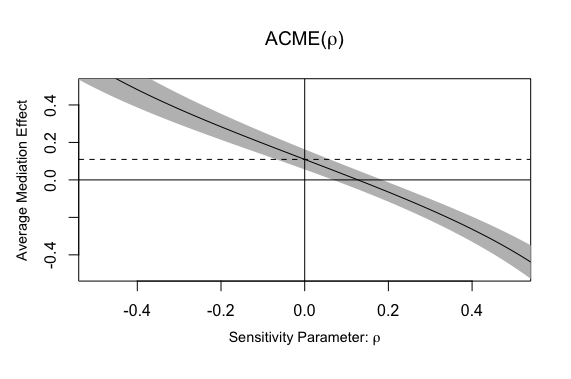
The first robustness check tests the fit of the model by replacing the mediating variable with other prospective intervening variables. To do this, Imai (2011) proposes estimating the values of for which the ACME would be statistically indistinguishable from zero. Even if the ACME itself is nonzero, a finding that it would be zero for small values would suggest that the positive ACME findings are not very trustworthy

Alternative causal mechanisms suggested by the literature that could theoretically mediate the relationship between exposure to terrorism and support for retaliation includes an emotional response of anxiety and an increase in perceived threat. For the reasons described above, we don’t hypothesize that either of these variables will intervene since more recent research suggests that anger is the dominant response of civilian populations to terror threats (Wayne 2019), and that the low-information features of cyber attacks is likely to mitigate the influence of perceived threat as a mediator (Egloff 2020). Still, a mediation analyses replacing anger with anxiety, and replacing anxiety with threat perception confirm that our model is robust to related variables.[[1]](#footnote-1) The average causal mediation effect of both were non-significant (ACME = .04, N.S. and .00, N.S for anxiety; ACME = .00, N.S. and .00. N.S. for threat perception). The fact that anxiety and anger are highly correlated in our dataset (r = .665, p < .000), and yet only anger successfully intervenes in this retaliation model, further emphasizes the particular contribution of anger above other similar emotional variables.

Second, following the suggestions of Imai and Tingley, we conducted a sensitivity analysis to determine whether our mediation results are robust against potentially confounding pre-treatment covariates, that is, whether there are conveniently missing variables that would render our significant model moot. In both models that appear in table 5, the estimated correlation coefficient between the error values of each model at which ACME reaches zero is .15 when observing cyber terrorism, and .13 when observing conventional terrorism (see figure 2). These relatively low figures indicate that an unobserved confounder affects the outcome variable, yet the fact that it is a similar level to the observed correlations between the outcome variable (Y) and its major correlates such as age (~.05) or gender (~.18) indicates that it would require a proportionately large omitted confound to disqualify the positive ACME findings.

**Figure 2: Sensitivity Analysis of Mediation Model**

Left. Exposure to Cyber Terrorism vs. Control Right. Exposure to Conventional Terrorism vs. Control

**

*Note: Sensitivity analysis of attitudes towards retaliatory strikes, with anger as mediator, and exposure to cyber terrorism (left) and conventional terrorism (right) as the independent variables. The dashed line represented the estimated mediation effect, the solid line represents the estimated average mediation effect at different levels of , and the gray region represents the 95% confidence interval for estimated average mediation effect at different levels of*

**Online Appendix G: Survey Questionnaire**

*Note: The questionnaire listed below reproduces the U.S. version of the questionnaire. The U.K. version is adapted slightly to reflect terminological differences (i.e. left vs. right / liberal vs. conservative). The Israeli version of the questionnaire was translated and back-translated to ensure for cross-language consistency.*

**Please indicate how often you use the following transportation options:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | 1   Never | 2   Every few   months | 3   Every   few weeks | 4   About once   a week | 5   A few times   a week | 6   Almost   every day |
| How often do you use a car? | **o** | **o** | **o** | **o** | **o** | **o** |
| How often do you ride the train (not including the underground or subway)? | **o** | **o** | **o** | **o** | **o** | **o** |
| How often do you take the bus? | **o** | **o** | **o** | **o** | **o** | **o** |
| How often do you take the metro/ underground/ subway? | **o** | **o** | **o** | **o** | **o** | **o** |

**How familiar are you with the following computer and internet-related concepts?**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | 1   Not at all | 2   To a small extent | 3   To a moderate   extent | 4   To a large extent | 5   To a great extent | 6   Absolutely |
| Advanced search | **o** | **o** | **o** | **o** | **o** | **o** |
| PDF | **o** | **o** | **o** | **o** | **o** | **o** |
| Spyware/ Malware | **o** | **o** | **o** | **o** | **o** | **o** |
| Wiki | **o** | **o** | **o** | **o** | **o** | **o** |
| Cache | **o** | **o** | **o** | **o** | **o** | **o** |
| Phishing | **o** | **o** | **o** | **o** | **o** | **o** |

**How would you describe your political position?**

o Extremely liberal

o Liberal

o Slightly liberal

o Moderate

o Slightly conservative

o Conservative

o Extremely conservative

**You will now watch a short video. Please make sure your audio is turned on.**

**Following the video, we will ask you two questions about what you have seen to make sure that you have watched the video carefully. You will not be able to continue with this questionnaire without answering these two questions correctly.**

**I understand that in order to continue with the survey, I need to watch the video carefully and respond to the questions correctly.**

o Yes

**Who was responsible for the attack?**

o Authorities don't know who is responsible for the attack

o North Korea

o ISIS

**Which infrastructure was the target of the attack?**

o the water supply

o the railway network

o the electricity grid

**On the scale below, please indicate how you are feeling at the moment.**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | 1   Not at all | 2   To a small extent | 3   To a moderate   extent | 4   To a large extent | 5   To a great extent | 6   Absolutely |
| Do you feel tense? | **o** | **o** | **o** | **o** | **o** | **o** |
| Do you feel calm? | **o** | **o** | **o** | **o** | **o** | **o** |
| Do you feel relaxed? | **o** | **o** | **o** | **o** | **o** | **o** |
| Do you feel upset? | **o** | **o** | **o** | **o** | **o** | **o** |
| Do you feel content? | **o** | **o** | **o** | **o** | **o** | **o** |
| Do you feel worried? | **o** | **o** | **o** | **o** | **o** | **o** |

**On the scale below, please indicate how you are feeling at the moment.**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | 1   Not at all | 2   To a small extent | 3   To a moderate   extent | 4   To a large extent | 5   To a great extent | 6   Absolutely |
| Are you mad? | **o** | **o** | **o** | **o** | **o** | **o** |
| Do you feel irritated? | **o** | **o** | **o** | **o** | **o** | **o** |
| Do you feel angry | **o** | **o** | **o** | **o** | **o** | **o** |
| Are you furious? | **o** | **o** | **o** | **o** | **o** | **o** |

**As part of US defense policy, how much do you support the following options?**

**How much do you support…**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | 1   Not at all | 2   To a small extent | 3   To a moderate extent | 4   To a large extent | 5   To a great extent | 6   Absolutely |
| a cyber attack against military targets of a party attacking the US? | **o** | **o** | **o** | **o** | **o** | **o** |
| freezing the attackers' bank accounts and imposing economic sanctions? | **o** | **o** | **o** | **o** | **o** | **o** |
| missile and drone strikes against civilian targets (banks, railways, airports) and military targets of an attacker? | **o** | **o** | **o** | **o** | **o** | **o** |
| strengthening regional security alliances and internal security mechanisms? | **o** | **o** | **o** | **o** | **o** | **o** |
| a cyber attack against civilian targets  (banks, railways, airports) and military targets of an attacker? | **o** | **o** | **o** | **o** | **o** | **o** |
| missile and drone strikes against  military targets of the attacker? | **o** | **o** | **o** | **o** | **o** | **o** |

**The following questions relate to previous experiences with attacks. Please mark your answer:**

|  |  |  |
| --- | --- | --- |
|  | Yes | No |
| Have you been a victim of a cyber-attack (e-mail scam, hacked into bank account, theft of credit card details, etc.)? | **o** | **o** |
| Have any of your friends or relatives been the victim of a cyber-attack? | **o** | **o** |
| Have you been a victim or experienced a terror attack? | **o** | **o** |
| Have any of your friends or relatives been a victim or experienced a terror attack? | **o** | **o** |

**We would like to ask you some basic demographic questions. Please remember that all data will remain anonymous.**

**In what year were you born?**

o Year:  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**What is your gender?**

o Male

o Female

o Other

**What is your marital status?**

o Single

o In a relationship

o Married

o Divorced

o Widowed

**How many children do you have?**

o Children:  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**What is the highest level of education you have completed?**

o Primary education (Elementary school)

o Lower secondary education (Middle school, junior high school)

o Upper secondary education (High school)

o Post-secondary/ non-tertiary education (Community college)

o Short-cycle tertiary education (Certificate programs)

o Bachelor's or equivalent level

o Master's or equivalent level

o Doctoral or equivalent level

**What is your current employment status?**

o Working now

o Temporarily laid off

o Unemployed

o Retired

o Permanently disabled

o Homemaker

o Student/ in education

**What is the ZIP code of your current place of residence?**

o ZIP:  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**What is your present religion, if any?**

o Protestant

o Catholic

o Other Christian

o Jewish

o Muslim

o Hindu

o Buddhist

o Other Faith

o Unaffiliated

**The average household income (after tax) in the United States is $3,670 USD a month (annually $44,040 USD).**

**Please rate your total household income from any sources of income in relation to the average US income.**

o Low

o Much lower than average

o A little lower than average

o Average

o A little higher than average

o Much higher than average

o High

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1. Threat perception was measured through a three-item scale that looks at the realistic and symbolic aspects of perceived threat. Each participant was asked whether and to what extent (1 = not at all; 6 = absolutely) a terror attack threatened their and their family’s economic situation, personal safety and values. Internal reliability was high. [↑](#footnote-ref-1)