sociological science

Supplement to:

Olsson, Filip. 2024. “Implicit Terror: A Natural Experiment on How Terror Attacks Affect Implicit Bias.” Sociological Science 11: 379-412.

Appendix A – Balance checks

Study 1

Table 1A. Covariate distribution with a 15-day bandwidth

	Treatment mean	*Control mean*	*Mean difference*	*P-value*	*Quantile-quantile mean difference*
Age	29.15	29.86	-0.71	0.65	0.04
Female	0.59	0.65	-0.06	0.36	0.03
College educated	0.83	0.71	0.12	0.06	0.06
Currently studying	0.42	0.45	-0.03	0.68	0.02
Foreign citizenship	0.02	0.01	0.01	0.67	0.00
Muslim background	0.05	0.02	0.02	0.35	0.01

Table 2A. Covariate distribution with a 30-day bandwidth

	Treatment mean	*Control mean*	*Mean difference*	*P-value*	*Quantile-quantile mean difference*
Age	27.54	28.35	-0.81	0.42	0.03
Female	0.62	0.62	-0.00	0.99	0.00
College educated	0.74	0.71	0.03	0.53	0.01
Currently studying	0.52	0.51	0.01	0.77	0.01
Foreign citizenship	0.03	0.02	0.01	0.72	0.00
Muslim background	0.06	0.04	0.02	0.37	0.01

Table 3A. Covariate distribution with a 60-day bandwidth

	Treatment mean	*Control mean*	*Mean difference*	*P-value*	*Quantile-quantile mean difference*
Age	28.72	28.34	0.38	0.57	0.02
Female	0.63	0.56	0.07	0.03	0.03
College educated	0.73	0.71	0.02	0.50	0.01
Currently studying	0.44	0.48	-0.05	0.15	0.02
Foreign citizenship	0.03	0.04	-0.01	0.28	0.01
Muslim background	0.08	0.07	0.01	0.62	0.00

Study 2

Table 4A. Covariate distribution with a 30-day bandwidth

	Treatment mean	*Control mean*	*Mean difference*	*P-value*	*Quantile-quantile mean difference*
Age	28.10	28.33	-0.24	0.12	0.01
Female	0.56	0.57	-0.01	0.28	0.00
College educated	0.58	0.57	0.01	0.24	0.00
Currently studying	0.17	0.16	0.02	0.00	0.01
Muslim background	0.08	0.11	-0.03	0.00	0.02

Appendix B – Placebo tests

Study 1

Table 1B. Changes in implicit bias over time in the French sample. Standard errors in parentheses.

	Entire dataset	Control group
Constant	0.674***	0.321***
	(0.044)	(0.054)
Days	-0.00002***	-0.0003
	(0.000003)	(0.003)
Num.Obs.	15903	203
R2	0.002	0.00005
R2 Adj.	0.002	-0.005

* p < 0.05, ** p < 0.01, *** p < 0.001 (two-tailed tests)

Table 2B. The effect on implicit and explicit bias a year before all three attacks in the French sample. Standard errors in parentheses.

	Model 1	Model 2	Model 3	Model 4
Constant	0.365***	0.361***	4.550***	4.541***
	(0.025)	(0.026)	(0.067)	(0.067)
Terror attacks	-0.001	0.003	-0.071	-0.056
	(0.035)	(0.036)	(0.093)	(0.095)
Num.Obs.	492	471	454	438
R2	0.000003	0.00001	0.001	0.0008
R2 Adj.	-0.002	-0.002	-0.0009	-0.001

* p < 0.05, ** p < 0.01, *** p < 0.001 (two-tailed tests)

Table 3B. The effect of the attacks on implicit bias a year before each attack in the French sample. Standard errors in parentheses.

	Charlie Hebdo	November 2015 Paris	Nice truck
Constant	0.399***	0.324***	0.3568***
	(0.0406)	(0.047)	(0.043)
Terror attacks	-0.0897	0.006	0.0394
	(0.061)	(0.057)	(0.078)

	Model 1	Model 2	Model 3	Model 4
Num.Obs.	176	219	98	
R2	0.01	0.005	0.003	
R2 Adj.	0.006	0.0004	-0.008	

* p < 0.05, ** p < 0.01, *** p < 0.001 (two-tailed tests)

Table 4B. The effect on implicit and explicit bias in the control group in the French sample. Standard errors in parentheses.

	Model 1	Model 2	Model 3	Model 4
Constant	0.324***	0.3053***	4.463***	4.453***
	(0.041)	(0.042)	(0.092)	(0.097)
Terror attacks	-0.014	-0.011	0.097	0.097
	(0.057)	(0.059)	(0.128)	(0.133)
Num.Obs.	203	196	195	188
R2	0.0003	0.0001	0.003	0.003
R2 Adj.	-0.005	-0.005	-0.002	-0.002

* p < 0.05, ** p < 0.01, *** p < 0.001 (two-tailed tests)

Study 2

Table 5B. Changes in implicit bias over time in the international sample. Standard errors in parenthesis.

	Entire dataset	Control group
Constant	0.405***	0.183
	(0.005)	(0.326)
Days	-0.00002***	-0.00002
	(0.0000003)	(0.0004)
Num.Obs.	653273	11597
R2	0.008	0.00003
R2 Adj.	0.008	-0.00006

* p < 0.05, ** p < 0.01, *** p < 0.001 (two-tailed tests)

Table 6B. The effect of terror attacks on implicit and explicit bias a year before all three attacks in the international sample.
Standard errors in parentheses.

	Implicit bias		Explicit bias	
	Model 1	Model 2	Model 3	Model 4
Constant	0.008	0.022***	4.476***	4.506***
	(0.006)	(0.006)	(0.015)	(0.014)
Terror attacks	0.008	-0.003	-0.013	-0.043*
	(0.008)	(0.008)	(0.019)	(0.019)
Num.Obs.	13860	11516	11695	10852
R2	0.00007	0.00001	0.00004	0.0005
R2 Adj.	0.0000007	-0.00008	-0.00004	0.0004

* p < 0.05, ** p < 0.01, *** p < 0.001 (two-tailed tests)

Table 7B. The effect of each terror attack on implicit bias a year before each attack in the international sample. Standard errors in parenthesis.

	Charlie Hebdo	November 2015 Paris	Nice truck
Constant	-0.004	0.006	0.016
	(0.016)	(0.009)	(0.010)
Terror attacks	0.016	0.014	-0.005
	(0.019)	(0.011)	(0.014)
Num.Obs.	2741	7335	3784
R2	0.000	0.000	0.000
R2 Adj.	0.000	0.000	0.000

p < 0.05, ** p < 0.01, *** p < 0.001 (two-tailed tests)

Table 8B. The effect of terror attacks on implicit and explicit bias in the control group in the international sample. Standard errors in parentheses.

	Implicit bias		Explicit bias	
	Model 1	Model 2	Model 3	Model 4
Constant	0.002	0.016*	4.398***	4.426***

	Implicit bias		Explicit bias	
	Model 1	Model 2	Model 3	Model 4
	(0.006)	(0.006)	(0.014)	(0.014)
Terror attacks	0.007	-0.002	0.067***	0.066*
	(0.008)	(0.009)	(0.020)	(0.021)
Num.Obs.	11597	9776	9866	9179
R2	0.00005	0.000004	0.001	0.0004
R2 Adj.	-0.00003	-0.0001	0.001	0.0003

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ (two-tailed tests)

Appendix C – Additional analysis

Table 1C. The effect of the three different attacks on implicit bias in France and the World. Standard errors in parentheses.

	France			**World**		
	Charlie Hebdo	November 2015 Paris	Nice truck	Charlie Hebdo	November 2015 Paris	Nice truck
Constant	0.264***	0.354***	0.350***	0.014	-0.002	0.009
	(0.043)	(0.046)	(0.066)	(0.008)	(0.006)	(0.008)
Terror attacks	0.168**	0.067	0.118	0.075***	0.039***	0.013
	(0.058)	(0.059)	(0.100)	(0.010)	(0.009)	(0.012)
Num.Obs.	176	199	74	9475	10238	6082
R2	0.046	0.007	0.019	0.006	0.002	0.0002
R2 Adj.	0.040	0.002	0.005	0.006	0.002	0.00003

* p < 0.05, ** p < 0.01, *** p < 0.001 (two-tailed tests)

Table 2C. The effect of terror attacks on implicit bias over time in France and the World. Standard errors in parentheses.

	France	**World**
Constant	0.312***	0.005
	(0.055)	(0.009)
Terror attacks	-0.022	0.104***
	(0.078)	(0.011)
Days	-0.0003	-0.00002
	(0.003)	(0.0004)
Terror attacks * Days	0.009*	-0.004***
	(0.004)	(0.0006)
Num.Obs.	449	25795
R2	0.038	0.007
R2 Adj.	0.032	0.007

* p < 0.05, ** p < 0.01, *** p < 0.001 (two-tailed tests)

Table 3C. The effect of terror attacks on implicit and explicit anti-Black bias in the international sample.

Standard errors in parentheses.

	Implicit bias		Explicit bias	
	Model 1	Model 2	Model 3	Model 4
Constant	0.270***	0.263***	4.219***	4.222***
	(0.001)	(0.002)	(0.003)	(0.004)
Terror attacks	0.003	-0.019***	-0.008*	-0.041***
	(0.002)	(0.003)	(0.004)	(0.006)
Num.Obs.	245740	85024	241750	92851
R2	0.00001	0.0004	0.00002	0.0005
R2 Adj.	0.00001	0.0004	0.00001	0.0005

* p < 0.05, ** p < 0.01, *** p < 0.001 (two-tailed tests)

Table 4C. The effect of terror attacks on implicit bias moderated by distance in the international sample. Model 2 uses a log transformation of distance. Standard errors in parentheses.

	Model 1	Model 2	Non-US sample
Constant	0.044***	0.269***	0.047***
	(0.012)	(0.057)	(0.012)
Terror attacks	0.103***	0.266***	0.102***
	(0.015)	(0.066)	(0.015)
Distance (km)	-0.000005**	-0.030***	-0.000004*
	(0.000002)	(0.006)	(0.000002)
Terror attacks * Distance (km)	-0.00001***	-0.027***	-0.000008**
	(0.000002)	(0.008)	(0.000002)
Num.Obs.	22125	21938	7040
R2	0.010	0.013	0.017
R2 Adj.	0.010	0.012	0.017

* p < 0.05, ** p < 0.01, *** p < 0.001 (two-tailed tests)

Table 5C. The effect of terror attacks on implicit and explicit Arab Muslim bias after excluding Muslim respondents in the French and the international sample. Standard errors in parentheses.

	French sample	International sample
Constant	0.326***	0.039***

	French sample	International sample
	(0.029)	(0.004)
Terror attacks	0.128**	0.043***
	(0.039)	(0.006)
Num.Obs.	425	23883
R2	0.025	0.002
R2 Adj.	0.023	0.002

* p < 0.05, ** p < 0.01, *** p < 0.001 (two-tailed tests)

Table 6C. The effect of terror attacks on implicit and explicit bias in the international sample. Standard errors in parentheses.

	Model 1	Model 2	Model 3
Constant	0.162***	-0.138***	-0.028***
	(0.014)	(0.011)	(0.007)
Terror attacks	0.033	0.066***	0.047***
	(0.019)	(0.015)	(0.009)
Political ideology	-0.030***		
	(0.003)		
Terror attacks * Political ideology	0.003		
	(0.004)		
Age		0.005***	
		(0.000)	
Terror attacks * Age		0.000	
		(0.000)	
College educated (Yes/No)			0.066***
			(0.009)
Terror attacks * College Educated			0.000
			(0.012)
Num.Obs.	22254	22567	22220
R2	0.014	0.021	0.008

	Model 1	Model 2	Model 3
R2 Adj.	0.014	0.021	0.008

* p < 0.05, ** p < 0.01, *** p < 0.001 (two-tailed tests)

Table 7C. The effect of terror attacks on implicit and explicit bias toward Arab Muslim and Black people in the international sample. Standard errors in parentheses.

	Arab Muslim bias		**Anti-black bias**	
	Implicit bias	Explicit bias	Implicit bias	Explicit bias
Constant	-0.029**	4.289***	0.227***	4.128***
	(0.01)	(0.061)	(0.011)	(0.058)
Terror attacks	0.046**	0.104**	0.011	0.057
	(0.015)	(0.0381)	(0.016)	(0.035)
Num.Obs.	3374	2840	3374	3008
R2	0.003	0.003	0.0004	0.0009
R2 Adj.	0.003	0.002	0.0001	0.0006

* p < 0.05, ** p < 0.01, *** p < 0.001 (two-tailed tests)

Appendix D – Descriptive statistics

Table 1D. Descriptive statistics for the French sample.

Demographical statistics	**N = 449**
Average age	
Mean (SD)	28 (10)
Sex	
Female	272 (61%)
Male	171 (38%)
Other/unknown	6 (1.3%)
College educated	320 (71%)
Currently studying	225 (51%)
Political ideology, from 1 (Very right) to 7 (Very left)	
Mean (SD)	4.63 (1.72)
Muslim background	24 (5.3%)
Foreign background	11 (2.4%)

Table 2D. Descriptive statistics for the international sample.

Demographical statistics	**N = 25795**
Average age	
Mean (SD)	28 (12)
Sex	
Female	12,921 (50%)
Male	9,726 (38%)
Other/unknown	3,148 (12%)
College educated	12,870 (58%)
Currently studying	3,802 (15%)
Political ideology, from 1 (Very right) to 7 (Very left)	
Mean (SD)	4.98 (1.64)
Muslim background	1,912 (7.4%)