Seeing is Disbelieving – Appendix:

We conduct a number of robustness checks to boost confidence in the results. These tests both help address concerns about potential confounders driving our findings, and ensure that our conclusions are robust to concerns about model selection and specification.

Anti-ISIL Bias: As noted in the text, one key concern is that more proximate civilians might be motivated not by a desire for accuracy, but by anti-ISIL bias. Indeed, locals might be more strongly opposed to ISIL due either to its brutalization of nearby communities (i.e., hatred) or to the more acute threat that it poses to them (i.e., fear). This might make them more supportive of any effort to eliminate it including the Coalition airstrikes (and thus skeptical of negative claims about them). To address this, we first include several distinct measures of Iraqi opinions toward ISIL in the full models. These include: (1) a direct item about civilians' support for ISIL's goals and activities, (2) a slightly more indirect question about their perceptions of its perceived influence on the country, and (3) a still-more-indirect measure of their proximity to ISIL terror attacks, as captured by data from the Global Terrorism Database (START 2017). In fact, the third measure builds on recent work showing that insurgents attack areas opposed to them with more violence (Hirose, Imai, and Lyall 2017) (which, in turn, further reinforces the opposition).

We include all three measures in the full models in Table A1. As is clear, they show that our key findings are unchanged; accounting for opposition toward ISIL in various ways does not change the conclusion that exposure to the airstrikes diminishes misperceptions about them.[1]

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[1] One might still worry that Iraqis – especially those near the action – could be hiding their views of ISIL. One way to check is to look at the non-response rates to the two direct questions about ISIL. If exposed civilians are hiding their hatred for ISIL out of fear, we might see significantly increased rates of non-response to these questions among them. Yet non-response to these items is not just low overall but *greater* among unexposed (1.28% and 2.18%) than exposed (0.67% and 0.80%) civilians. This does *not* support the idea that proximate civilians see items about ISIL as any more sensitive than other Iraqis and are thus more afraid to reveal their views (i.e., opposition) of the group.

Table A1: Replication of Full Models, with Measures of Attitudes about ISIL

	Airstrikes Target PMF	Airstrikes Help ISIL
Exposure		
Time under ISIL	-0.12***	-0.13***
	(0.03)	(0.03)
Orientations		
Shi'a Arab	0.65***	0.75***
	(0.12)	(0.12)
Sunni Arab	0.07	0.22
	(0.12)	(0.11)
Confidence in U.S.	-0.32***	-0.24***
	(0.03)	(0.03)
Support for PMF	0.18***	0.25***
	(0.05)	(0.05)
Information		
Iraqiyya TV	0.11***	0.05
	(0.03)	(0.03)
Sharqiyya TV	-0.20***	-0.12***
	(0.03)	(0.03)
Rudaw TV	-0.27***	-0.28***
	(0.04)	(0.04)
ISIL attitudes		
Support for ISIL	-0.10	-0.08
	(0.12)	(0.12)
ISIL influence positive	0.06	0.14*
	(0.06)	(0.06)
Distance to ISIL attack	-0.00	-0.00
	(0.00)	(0.00)
Constant	2.27***	1.88***
	(0.17)	(0.17)
Observations	2,218	2,219
R^2	0.33	0.31

Notes: Results from OLS regressions. Demographic factors (age, gender, education, income, urbanity, IDP status) not shown. Standard errors in parentheses. *** p<0.001, ** p<0.01, * p<0.05

In addition to this, we also conduct a placebo or "control-outcome" test to help address this concern. The idea of these tests is to leverage the "specificity of the treatment effect" (Hill 1965) by using outcomes that – while otherwise similar to the key dependent variable – should not be affected by the treatment. In this way, analysts can rule out plausible alternatives. In our case, for example, we look at Iraqis' belief in two *valid* negative allegations about the behavior of the PMF – instead of the Coalition – in its anti-ISIL activities. If proximate Iraqis were truly motivated by hatred or fear of ISIL (rather than a drive for accuracy), we would expect them to reject these

negative claims – just as they do those about the Coalition, since the PMF has been one of ISIL's most effective adversaries.

Table A2: Placebo Test – Impact of Exposure on Concerns about PMF Abuses

	PMF will punish	PMF will displace
Exposure		
Time under ISIL	0.09	0.04
	(0.05)	(0.05)
Orientations		
Shi'a Arab	-4.71***	-5.65***
	(0.54)	(0.74)
Sunni Arab	-0.67**	-0.86***
	(0.24)	(0.23)
Confidence in U.S.	-0.44***	-0.38***
	(0.08)	(0.08)
Information		
Iraqiyya TV	-0.81***	-0.84***
	(0.07)	(0.07)
Sharqiyya TV	0.54***	0.42***
	(0.08)	(0.08)
Rudaw TV	0.36***	0.40***
	(0.09)	(0.10)
Constant	-0.90*	-0.22
	(0.38)	(0.38)
Observations	2,214	2,211

*Notes: Results from logit regressions. Demographic factors (age, gender, education, income, urbanity, IDP status) not shown. Standard errors in parentheses *** $p<0.001$, ** $p<0.01$, * $p<0.05$*

In particular, the survey asked Iraqis if they were concerned about each of the following by the PMF in its anti-ISIL activities: (1) that it will "take revenge on local civilians," and (2) that it will "displace civilians from the area." Critically, while these questions do not represent factual claims since they are about future expectations and subjective degrees of concern, these concerns are generally *valid* in nature;[2] they do not offer lies about the conflict. In other words, we would *not* expect exposed citizens to be more skeptical of these concerns if our argument is right, since

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[2] Reports of abuse, victimization, and displacement of local civilians by the PMF in anti-ISIL "clearing" efforts were common from 2014-16, prompting the U.S. to insist on its exclusion from key operations like the recapture of Ramadi in favor of other local proxies and partners. See, for example, "Iraqi Army Makes New Push to Retake City of Ramadi From Islamic State" *Wall Street Journal*, December 23, 2015. Available at https://www.wsj.com/articles/iraqi-army-begins-final-offensive-to-retake-ramadi-from-islamic-state-1450779699

"seeing" should not drive "disbelieving" of well-founded claims about the fighting. Thus a null result here would strengthen our argument that it is only untrue claims about the fighting (rather than, say, unwelcome ones) that are rejected by the "treated" individuals.[3]

Table A2 shows the results of logit models of both concerns, using the main specification in the article. The results reveal that exposure has no clear relationship with concerns about PMF behaviors; the coefficient is far from significance in both cases. These results cast more doubt on the idea of an anti-ISIL bias confounder. If local civilians were truly driven by antipathy to ISIL, why would they only reject negative claims about the *Coalition's* anti-ISIL efforts, but not also those of the *PMF*? Along with our efforts to account for ISIL attitudes, these results speak against the notion that our findings are driven by anti-ISIL bias.[4]

Preference Falsification: Another concern is that, in a precarious context like contemporary Iraq, some individuals may not have responded to questions about their attitudes and experiences in the conflict truthfully. One manifestation of this concern focuses on our DVs: "local" respondents may have been afraid to voice opposition to the Coalition airstrikes given their exposure or proximity to the campaign. Another manifestation centers around the key explanatory variable: respondents might not be truthful about whether they had lived under ISIL's rule if they were more opposed to the Coalition. Both could in theory pose problems for our results.

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[3] It is worth noting that these two items were just asked to Iraqis who first said they opposed the PMF's participation in anti-ISIL operations. Yet, we recoded them to include our entire sample, with PMF supporters coded as zeroes (in other words, coding PMF supporters as "not concerned"). Thus, the items can be seen as capturing a very high level of concern about these abuses (so high that it would provoke opposition to PMF inclusion). Results are similar when only analyzing the PMF opponents (available upon request), but we opt for the full sample here with recoding as our preferred test.

[4] These results also show that the findings are not just the product of "reactance bias" (e.g., Brehm and Brehm 1981) among the local population, whereby those who have lived under ISIL's rule are more skeptical of any statement put before them about the conflict by enumerators (since they are not more skeptical of the anti-PMF statements, but just the anti-Coalition ones). Thanks to an anonymous colleague for raising this issue.

These concerns are mitigated in several ways. First, a general point worth reiterating is that the survey does *not* contain any responses from areas that were actively under ISIL rule or actively being bombed by the Coalition. Rather, respondents who *had* lived under ISIL's rule or *were* close to (past) Coalition airstrikes in our study were in *liberated* areas such as Tikrit, Fallujah, or Ramadi that had been re-captured from the organization by the time the survey was conducted in fall 2016. This does not rule out the potential for preference falsification, but it is important to clarify in light of recent evidence that such falsification is likely to occur in areas of insurgent control (Matanock and Garcia-Sanchez 2018).

Second, we probe these concerns empirically. To begin with, we look at non-response rates on the relevant items. All of the relevant items have extremely low rates of non-response, with 3% of the sample not responding to each DV and less than 1% not responding to the questions used to construct the main explanatory variable. These rates are not significantly higher among those with experience under ISIL's rule. Moreover, we also look at enumerator judgments of interview quality at the end of the survey, which show that the vast majority of respondents were perceived as being candid (92%) and comfortable (90%) during their interviews. These numbers were also not higher among the population that lived under ISIL control, and adding them to the models (see Table A3) has no substantive impact on the results.

Third, other aspects of the analysis help ease these concerns. For one thing, the divergence of attitudes and beliefs in the results is notable. If proximate Iraqis were falsifying their views out of fear of the U.S., we would expect this to apply both to their beliefs about the U.S.-led airstrikes and their broader attitudes toward the U.S. The fact that the effect of personal experience on beliefs persists even when controlling for attitudes toward the U.S. (Table 1) and that such attitudes matter less for beliefs among exposed civilians (Figure 1) is at odds with a preference falsification story.

It is unclear why "local" civilians would be falsifying their beliefs more than their attitudes about counterinsurgent actors (with the latter the central focus in Matanock and Garcia-Sanchez 2018). Finally, the robustness of the results with the behavioral exposure measure – that is, strike distance using Airwars event data (Figure 2) – is also worth reiterating here. Concerns about misreporting of the key explanatory variable are eased by the fact that the results hold when using an observed rather than self-reported measure of personal experience.

Table A3: Replication of Full Models with Measures of Interview Quality

	Airstrikes Target PMF	Airstrikes Help ISIL
Exposure		
Time under ISIL	-0.12***	-0.13***
	(0.03)	(0.02)
Orientations		
Shi'a Arab	0.64***	0.76***
	(0.12)	(0.12)
Sunni Arab	0.10	0.27*
	(0.11)	(0.11)
Confidence in U.S.	-0.31***	-0.23***
	(0.03)	(0.03)
Support for PMF	0.19***	0.24***
	(0.05)	(0.05)
Information		
Iraqiyya TV	0.12***	0.05
	(0.03)	(0.03)
Sharqiyya TV	-0.19***	-0.12***
	(0.03)	(0.03)
Rudaw TV	-0.28***	-0.29***
	(0.04)	(0.04)
Interview		
Perceived comfort	-0.20*	-0.31***
	(0.09)	(0.09)
Perceived honesty	0.06	0.20
	(0.12)	(0.12)
Constant	2.32***	1.92***
	(0.20)	(0.19)
Observations	2,262	2,262
R^2	0.34	0.32

*Notes: Results from OLS regressions. Demographic factors (age, gender, education, income, urbanity, IDP status) not shown. Standard errors in parentheses *** p<0.001, ** p<0.01, * p<0.05*

Sectarian Composition: Another potential concern is that, while Iraq is a Shi'a-majority country, the constituency that has lived under ISIL's rule is largely Sunni Arab. Thus, one might worry that we are not comparing "apples to apples" when we analyze the effect of exposure. This concern is lessened by the fact that we include sectarian identity in our models, and that some of the models below only examine differences *among* the exposed population. Yet, there may still be a concern that the results are influenced by the distinct sectarian profiles of local vs. non-local respondents. To help ameliorate this, we replicate the models with Sunni Arabs only. The results are shown in Table A4. As is clear, this choice has no substantive impact on our results.

Table A4: Replication of Full Models with Sunni Arabs Only

	Airstrikes Target PMF	Airstrikes Help ISIL
Exposure		
Time under ISIL	-0.14***	-0.14***
	(0.03)	(0.03)
Orientations		
Confidence in U.S.	-0.09*	-0.03
	(0.04)	(0.04)
Support for PMF	0.02	0.03
	(0.06)	(0.06)
Information		
Iraqiyya TV	0.03	-0.02
	(0.04)	(0.05)
Sharqiyya TV	-0.21***	-0.16**
	(0.05)	(0.05)
Rudaw TV	-0.28***	-0.25**
	(0.08)	(0.08)
Constant	2.66***	2.52***
	(0.24)	(0.24)
Observations	974	979
R^2	0.14	0.13

*Notes: Results from OLS regressions. Demographic factors (age, gender, education, income, urbanity, IDP status) not shown. Standard errors in parentheses *** p<0.001, ** p<0.01, * p<0.05*

Alternate Bias Measures: We also check to ensure that our results are robust to the measurement of key variables. In particular, we replicate the analysis with new measures of support for the actors included – the U.S. and PMF. For the U.S., we use an item on the degree to which civilians perceive

the U.S. as a reliable partner to Iraq (*r=.71* with the original item). For the PMF, we use an item

on people's view of the PMF's influence on the country (*r=.86* with the original item). To explore

the effect of these alternate measures, we replicate the interaction figures in which their impact on

the two misperceptions is shown by people's exposure to the strikes (since this was the main test

in which we had a substantive interest in the effect of prior attitudes). Figure A1 shows that these

new measures yield no substantive change in results: Iraqis' views of the U.S. and PMF still shape

their beliefs in general, but the effects are diminished among exposed civilians.

Figure A1: Interaction Plots, with Alternate Measures of Support for the U.S. and PMF
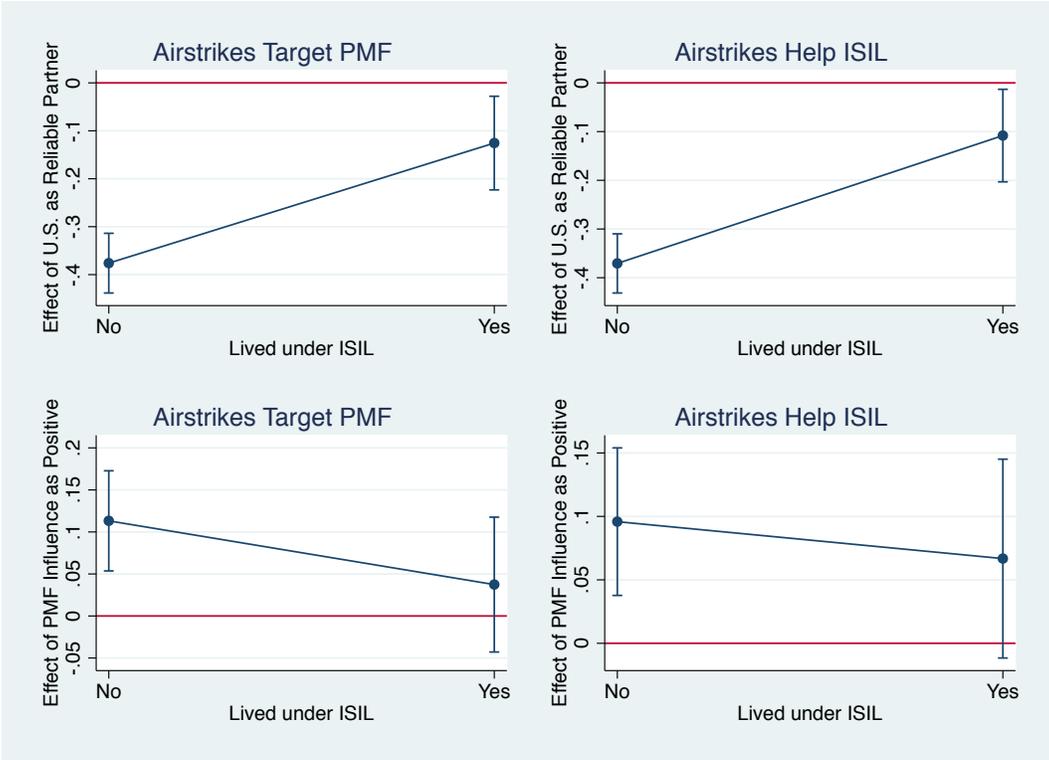
Note: figure shows marginal effect of perceptions that the U.S. is reliable and that the PMF's influence is positive by experience under ISIL rule. Results from OLS regressions, with 95% confidence intervals.

Modeling Choices: We also carry out additional tests to ensure that our results are robust to model

selection and specification concerns. First, we add district fixed effects in order to control for other

unmeasured differences between districts that could potentially confound our results. Second, we include clustered standard errors at the PSU level in order to account for the potential grouping of Iraqis from the same spatial units. Third, we replicate the findings using ordered logit as opposed to OLS models to ensure that the results are not simply artifacts of model selection. The results of all three tests are reported in Table A5. As is clear, our findings are unaffected in all three cases.

Table A5: Replication with District Fixed Effects (M1-M2), Clustered Standard Errors (M3-M4), and Ordered Logit Models (M5-M6)

	Airstrikes Target PMF (M1)	Airstrikes Help ISIL (M2)	Airstrikes Target PMF (M3)	Airstrikes Help ISIL (M4)	Airstrikes Target PMF (M5)	Airstrikes Help ISIL (M6)
Exposure						
ISIL time	-0.10**	-0.10***	-0.12***	-0.13***	-0.17***	-0.19***
	(0.03)	(0.03)	(0.03)	(0.03)	(0.04)	(0.04)
Orientations						
Shi'a Arab	0.13	0.15	0.65***	0.77***	1.04***	1.20***
	(0.15)	(0.15)	(0.16)	(0.16)	(0.18)	(0.19)
Sunni Arab	-0.55***	-0.47**	0.09	0.25	0.20	0.46*
	(0.15)	(0.15)	(0.15)	(0.15)	(0.18)	(0.18)
Pro U.S.	-0.33***	-0.24***	-0.31***	-0.24***	-0.50***	-0.40***
	(0.03)	(0.03)	(0.04)	(0.04)	(0.05)	(0.05)
Pro PMF	0.03	0.09+	0.18**	0.24***	0.28***	0.37***
	(0.05)	(0.05)	(0.06)	(0.06)	(0.07)	(0.07)
Information						
Iraqiyya TV	0.04	-0.01	0.12***	0.05	0.18***	0.07
	(0.03)	(0.03)	(0.04)	(0.04)	(0.05)	(0.05)
Sharqiyya TV	-0.20***	-0.14***	-0.19***	-0.12***	-0.29***	-0.18***
	(0.03)	(0.03)	(0.03)	(0.03)	(0.04)	(0.04)
Rudaw TV	-0.18***	-0.16**	-0.28***	-0.29***	-0.46***	-0.52***
	(0.05)	(0.05)	(0.06)	(0.05)	(0.07)	(0.07)
Other Checks						
District FE	**YES**	**YES**				
Clustered SE			**YES**	**YES**		
Ordered Logit					**YES**	**YES**
Constant	1.94***	1.57***	2.21***	1.85***		
	(0.37)	(0.37)	(0.22)	(0.22)		
Observations	2,262	2,262	2,262	2,262	2,262	2,262
R^2	0.39	0.37	0.33	0.31		

*Notes: Results from OLS (M1-4) and ordered logit (M5-6) regressions. Demographic factors (age, gender, education, income, urbanity, IDP status) and ordered logit cut points not shown. Standard errors in parentheses *** p<0.001, ** p<0.01, * p<0.05*

Appendix References:

Brehm, Sharon S., and Jack W. Brehm. 1981. *Psychological Reactance – A Theory of Freedom and Control.* New York, NY: Academic Press.

Hill, Austin. 1965. "The Environment and Disease: Association or Causation?" *Proceedings of the Royal Society of Medicine* 58(5): 295-300.

Hirose, Kentaro, Kosuke Imai, and Jason Lyall. 2017. "Can Civilian Attitudes Predict Insurgent Violence?" *Journal of Peace Research* 54(1): 47-63.

Matanock, Aila M., and Miguel García-Sánchez. 2018. "Does Counterinsurgent Success Match Social Support?" *Journal of Politics* 80(3): 800-14.

National Consortium for the Study of Terrorism and Responses to Terrorism (START). 2017. "Global Terrorism Database." http://www.start.umd.edu/gtd.

Seeing is Disbelieving – Supporting Information File:

Distribution of Survey Responses and Violence across Iraq
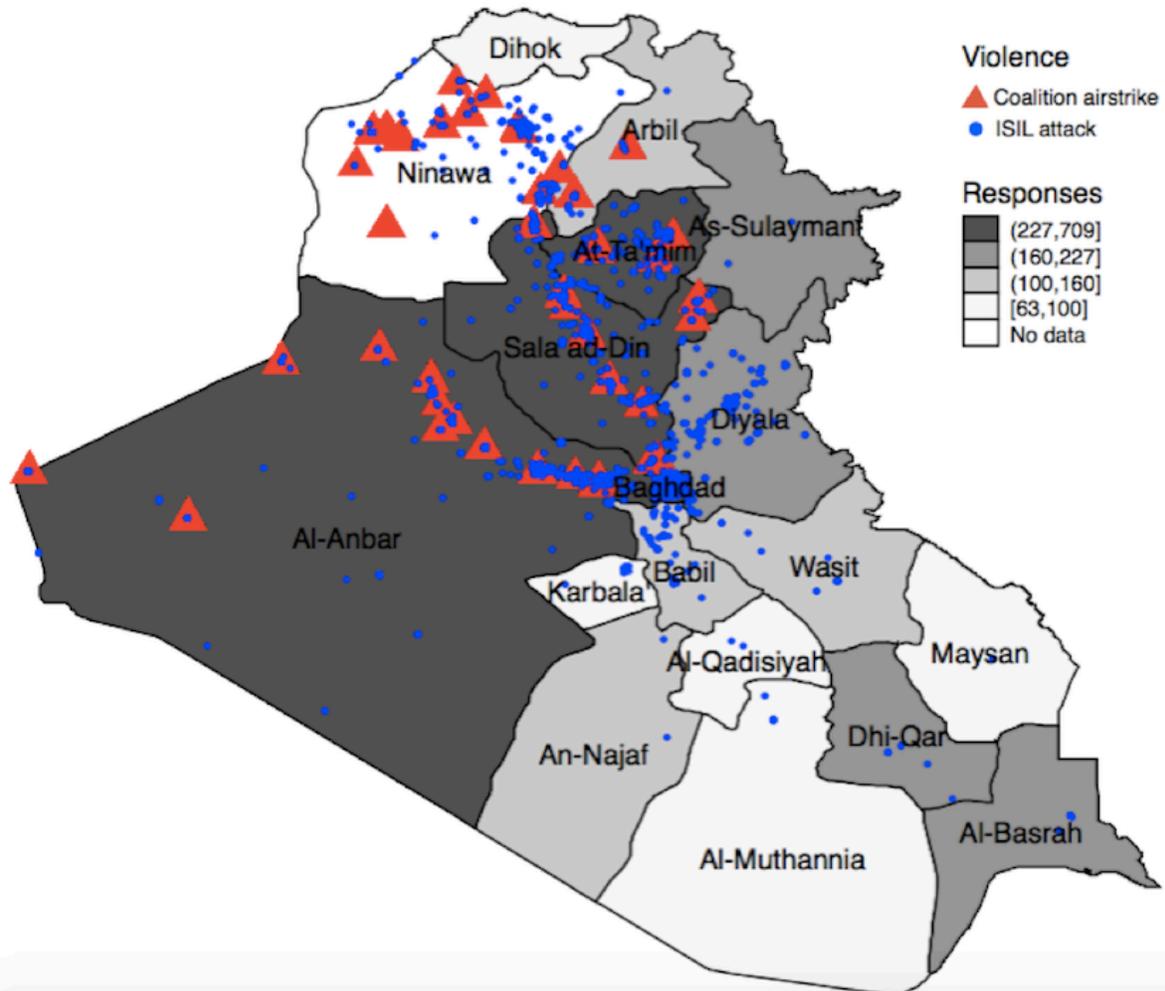
Note: figure shows the distribution of survey responses across Iraqi governorates and the geo-location of Coalition airstrikes and ISIL terrorist attacks in Iraq from 2013-16. Airstrike data comes from Airwars.org, while ISIL attack data are from the Global Terrorism Database (GTD). Note that there is wide variation in respondents' proximity to both types of violence.

**Percentmatch Plot to Check for Data Falsification**
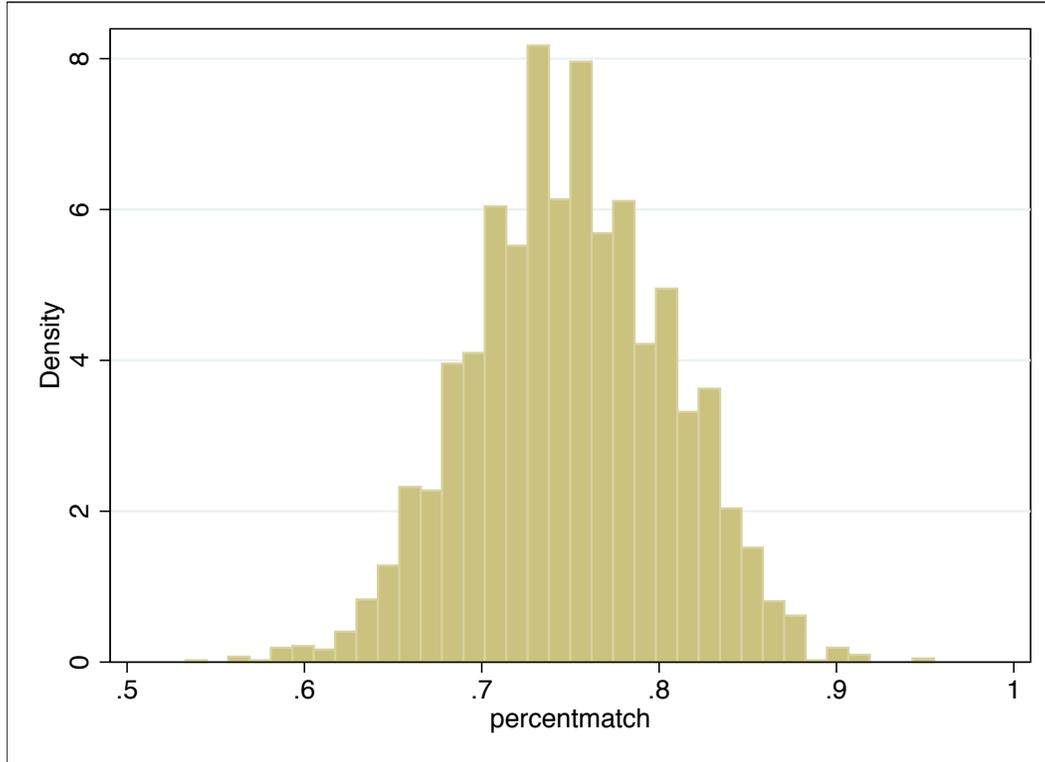
Note: plot shows healthy normal distribution centered at roughly 0.75, with no suspicious outlier clusters close to 1.

Comparison of Sample Demographics with Arab Barometer and Iraqi Central Organization of Statistics (COSIT) Projections

	IIACSS 2016	AB 2012	AB 2013	COSIT 2014
__Urban__				
Urban	66.5%	71.6%	69.1%	69.7%
Rural	33.5	28.4	30.9	30.3
__Gender__				
Male	54.2%	52.6%	50.0%	50.9%
Female	45.8	47.4	50.0	49.1
__Age__				
18-24	16.7%	22.8%	25.3%	25.2%
25-34	28.0	25.9	27.4	27.0
35-44	24.2	22.8	20.0	20.4
45-54	19.0	19.1	16.8	14.1
55+	12.1	9.6	10.5	13.3
__Unemployed__				
Yes	14.2%	14.0%	12.5%	14.3%
No	85.8	86.0	87.5	85.7
__Ethnicity__				
Arab	85.8%	83.5%	83.5%	
Kurd	12.9	14.6	14.6	
__Islamic Sect__				
Sunni	47.6%	45.9%	44.3%	
Shi'a	52.4	53.4	51.7	

Note: Arab Barometer respondents who identified as just Muslim were split between Sunni and Shi'a proportionally for purposes of comparison. There is no contemporary census data on the country's ethnic or sectarian composition (due to the political sensitivity of these issues).

Distribution of Belief in Factual Misperceptions about Coalition Airstrikes
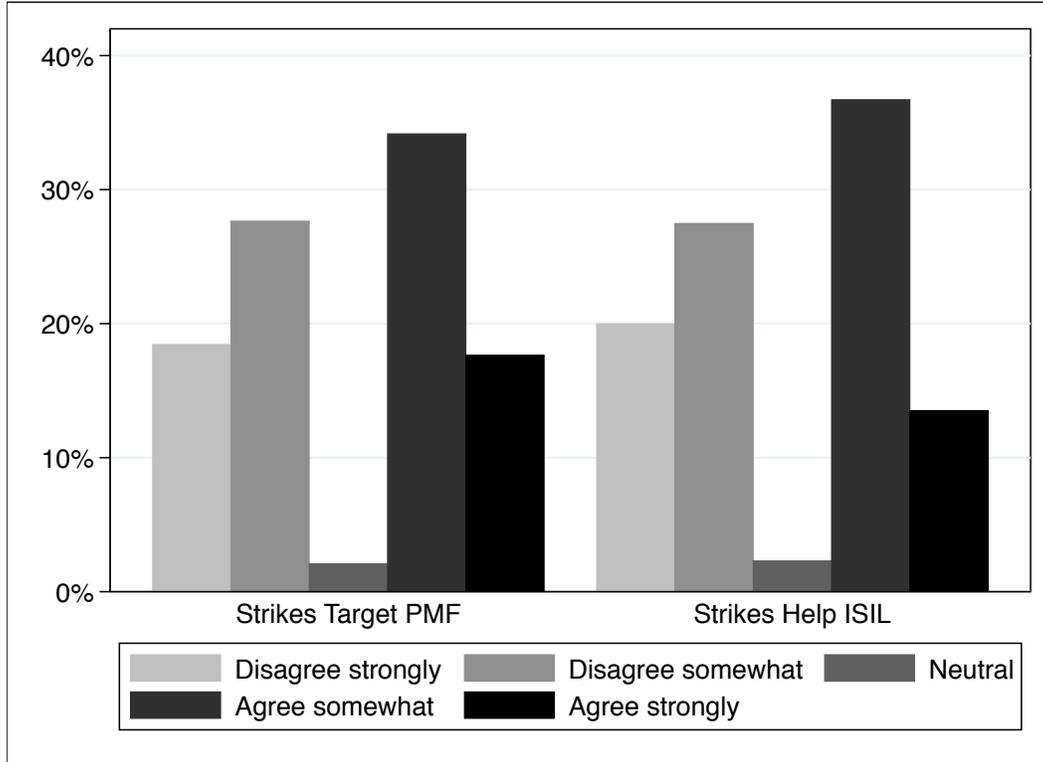
Note: figure shows fairly normal distribution of both of the factual misperceptions. Middle response option (neutral) is less common because it was not offered by enumerators.

Descriptive Statistics for All Variables Used

Variable	N	Mean	SD	Min	Max
Strikes target PMF	3,393	2.049	1.435	0	4
Strikes help ISIL	3,391	1.962	1.407	0	4
Shi'a Arab	3,500	0.454	0.498	0	1
Sunni Arab	3,500	0.390	0.488	0	1
Kurd	3,500	0.129	0.335	0	1
Confidence in U.S.	3,485	0.812	1.000	0	3
Support for PMF	3,426	1.399	0.826	0	2
Iraqiyya TV	3,479	2.054	1.146	0	3
Sharqiyya TV	3,478	1.883	1.187	0	3
Rudaw TV	2,773	0.545	0.947	0	3
Lived under ISIL	3,496	0.213	0.410	0	1
Time under ISIL	743	1.688	1.258	0	4
Age	3,500	37.78	12.71	18	80
Gender	3,500	0.542	0.498	0	1
Education	3,323	2.227	1.489	0	6
Income	3,259	3.763	1.776	0	6
Urbanity	3,500	0.665	0.472	0	1
IDP status	3,498	0.144	0.351	0	1
Distance to airstrike	3,500	87.18	125.8	0.233	469.3
Support for ISIL	3,433	0.027	0.219	0	2
ISIL influence positive	3,459	0.086	0.392	0	4
Distance to ISIL attack	3,500	6.188	12.06	0.004	180.9
Comfort	3,500	0.896	0.305	0	1
Honesty	3,500	0.923	0.267	0	1
U.S. reliability	3,480	0.942	1.070	0	3
PMF influence positive	3,475	2.795	1.549	0	4

Note: table shows number of observations, mean, standard deviation, and minimum and maximum value for each of the independent variables used in the analysis.

Question Wording for Attitudinal Survey Items

Variable	Question Wording
Strikes Target PMF	*"Please tell me whether you agree or disagree with the following statements regarding Coalition actions in Iraq. And is that somewhat or strongly?" [Coalition airstrikes mainly target PMF forces]*
Strikes Help ISIL	*"Please tell me whether you agree or disagree with the following statements regarding Coalition actions in Iraq. And is that somewhat or strongly?" [Coalition airstrikes mainly help ISIL]*
Confidence in U.S.	*"How much confidence do you have in the following countries to deal responsibly with problems in our region – a great deal of confidence, a fair amount of confidence, not very much confidence, or no confidence at all?" [The United States]*
Support for PMF	*"For each of the following groups, please tell me whether you support their goals and activities, support their goals but not their activities, or oppose them completely – or have you not heard enough to say?" [Popular Mobilization Forces]*
Iraqiyya TV	*"I'm going to read you the names of some news sources that people use. For each one, please tell me on average how often you use it for news and information – every day, at least once a week, less often, or never? [al-Iraqiyya TV]*
Sharqiyya TV	*"I'm going to read you the names of some news sources that people use. For each one, please tell me on average how often you use it for news and information – every day, at least once a week, less often, or never? [al-Sharqiyya TV]*
Rudaw TV	*"I'm going to read you the names of some news sources that people use. For each one, please tell me on average how often you use it for news and information – every day, at least once a week, less often, or never? [al-Rudaw TV]*
Support for ISIL	*"For each of the following groups, please tell me whether you support their goals and activities, support their goals but not their activities, or oppose them completely – or have you not heard enough to say?" [ISIL]*
ISIL influence positive	*"Do you think the following organizations' influence on internal events and affairs in Iraq has been completely positive, somewhat positive, neither positive nor negative, somewhat negative, or complete negative?" [ISIL]*
PMF influence positive	*"Do you think the following organizations' influence on internal events and affairs in Iraq has been completely positive, somewhat positive, neither positive nor negative, somewhat negative, or complete negative?" [Popular Mobilization Forces]*
U.S. reliability	*"To what extent do you think each of the following countries is a reliable partner to Iraq – a great deal, a fair amount, not very much, or not at all?" [The United States]*

Iraqi Opinion of ISIL Over Time, 2014-16
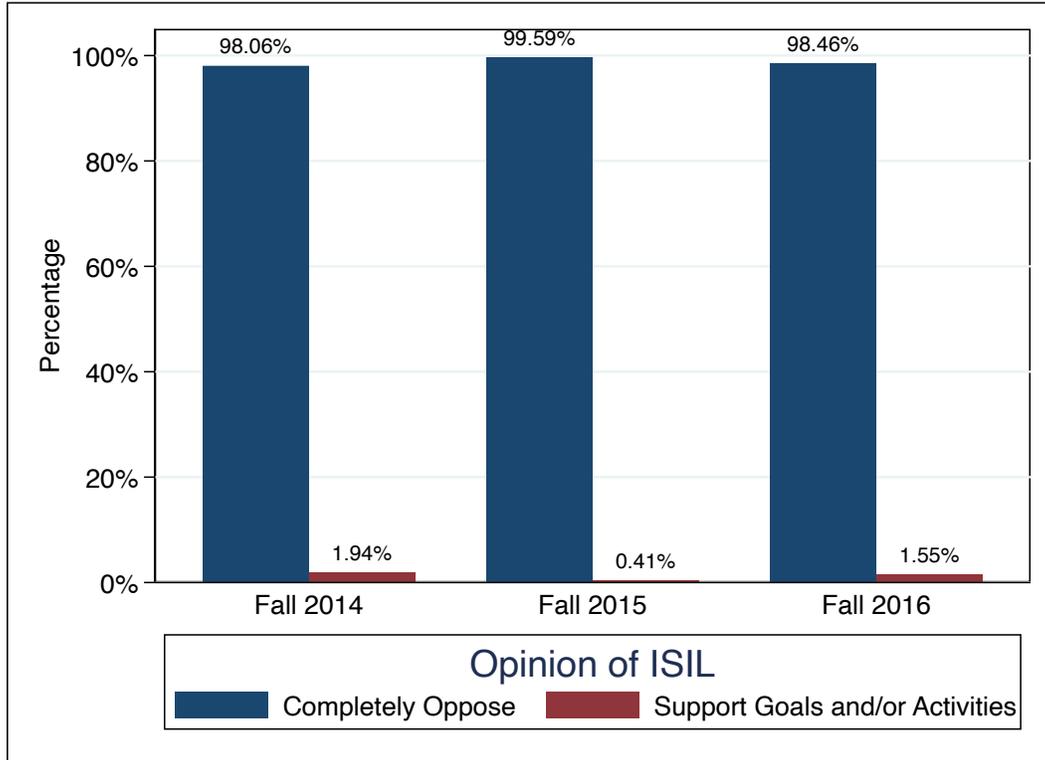
Respondent Estimates of Percentage of Countrymen Who Support ISIL

kernel = epanechnikov, bandwidth = 1.1893