Appendix I:

This Appendix to "The (In)Effectiveness of Torture" provides additional empirical analysis of the relationship between torture and counterinsurgency. Four supplemental analyses are examined. First, an empirical analysis examines whether the types of counterinsurgent violence witnessed following torture are consistent with the theoretical mechanisms articulated in the main text. Second, an analysis tests the use of torture under different strategic settings to examine the rival claim that the outcomes observed result from broader strategic decisions. Third, an analysis probes the different data sources used to identify torture and replicates the analysis on different source material. Finally, an analysis replicates the principal findings in the main text using cross-sectional time-series OLS regression.

Part I: A Test of Mechanisms: Selective and Indiscriminate Counterinsurgent Killings

The theory articulated in the main text argued that torture increased the subsequent number of counterinsurgent killings because it increased the information available to counterinsurgent forces. Even while such information is expected to be inaccurate, counterinsurgents are expected to act on it given the pressures to respond to an undiminished insurgent threat. If this argument is correct, then we should see an increase in a particular form of counterinsurgent violence—selective killings. Selective killings occur when the state targets specific individuals, and can be distinguished from indiscriminate killings, which are carried out without regards to the individual identities of the victims (Kalyvas 2006). As in Kalyvas' model, the difference between the two is not that one targets insurgents and the other targets civilians, but that in selective killings

counterinsurgents take effort to target specific individuals where as in indiscriminate killings counterinsurgents are selecting victims as if by random selection. If torture were providing the state with accurate information that identified insurgent targets, we should expect to have observed a decrease in insurgent violence following the use of torture. The main text results demonstrate that this was not observed. Still, the observed increases between torture and subsequent counterinsurgent killings may have occurred through other unobserved mechanisms besides the provision of information. For example, it is possible that torture did not reveal anything. In this setting, state forces could lash out indiscriminately against the population to produce the resulting increase in counterinsurgent killings.

To examine the validity of these two distinct mechanisms, the analysis in Table AI estimates the relationship between torture and two forms of counterinsurgent killings. Selective killings are examined in model AI: 1, while indiscriminate killings are examined in model AI: 2. Both models employ the matched sample from the main text and replicate the same difference-in-difference estimation strategy for the two month period. Indiscriminate killings are defined as killings resulting from massacres committed by counterinsurgent forces. Massacres were identified as "an indiscriminate attack," that involved, "the execution of five or more people, in the same place, as part of the same operation and whose victims were in an indefensible state" (Mezquita 2000, 6). Selective killings are identified as counterinsurgent killings not resulting from massacres.[1]

[1] To be clear, the main text analysis estimates all individuals killed by counterinsurgent forces, including both selective and indiscriminate killings. Within the present analysis, not all killings outside the context of massacres are truly selective in nature. However, as the results present evidence that indiscriminate killings are not associated with torture, any indiscriminate killings included in the selective measure should bias the sample against the proposed hypothesis that engaging in torture increases selective killing.

Table AI: Difference-in-Difference Estimates of Two Types of Counterinsurgent Killings

	Counterinsurgent Killings			
	AI: 1		AI: 2	
	Local		Local	
	Selective Killings		Indiscriminate Killings	
	Point Estimate (Standard Error)	95% CI	Point Estimate (Standard Error)	95% CI
δ **ATET (T+1)**	**79.52* (36.34)**	**8.02, 151.02**	**7.09 (5.11)**	**-2.96, 17.16**
γ Treatment Group	-7.08 (33.91)	-73.78, 59.61	-1.34 (4.01)	-9.23, 6.54
λ T+1	-70.25* (27.33)	-124.00, 16.49	-5.06 (3.76)	-12.47, 2.33
Intercept	88.63 (27.10)	35.31, 141.95	11.18*** (3.26)	4.76, 17.60
N	660		660	
* P<0.05, ** P<0.01, ***0.001				

As shown in Model AI: 1, selective state killings increased significantly following the use of torture. Indiscriminate killings by counterinsurgents do not display this trend, however. As shown in Model AI: 2, there is no significant increase in indiscriminate counterinsurgent killings that takes place after the use of torture. These results suggest that the increase in counterinsurgent killings following torture is primarily selective in nature, which is consistent with the causal mechanisms outlined in the main text. This evidence suggests that increases in counterinsurgent killings following torture occur because the state is responding to bad information, rather than indiscriminately lashing out at the population.

Part II: A Test of a Rival Propositions: The Buildup of Coercive Capacity

Having identified that the killings committed by counterinsurgents following torture tend to be selective in nature, the Appendix now turns to another supplemental analysis designed to rule out a different plausible rival hypothesis. As noted in the theoretical section of the main text, counterinsurgents have to be present in order to commit torture. There is concern that increases in counterinsurgent killings could be brought about by their presence, rather than by any impact of torture. The main text analysis seeks to counter this challenge by showing that the increase in counterinsurgent killing occurred immediately after torture and not in the periods directly preceding or directly following torture.

Another way of considering the plausibility of counterclaims regarding a buildup of coercive capacity is to examine the use of torture under different strategic settings. If the challenge is that the relationship between torture and increases in counterinsurgent killings occurs because of an exogenous increase in troop activity that motivates both torture and subsequent killings then it should be possible to examine the plausibility of this claim by testing the relationship between torture and subsequent killings under settings where (1) there was no buildup in coercive capacity and (2) there was a heavy buildup of coercive capacity. Comparing these two settings can provide insight into the role of coercive buildup in producing the observed correlations. If it is the case that the reason behind the observed relationship is truly that both torture and killings are being driven by coercive buildup, then we should expect to observe statistically significant increases in counterinsurgent killings where there had been a heavy buildup in coercive capacity, but not where there the state did not build up its capacity.

Table AII presents the results of difference-in-difference models estimating the association between torture and changes in counterinsurgent killings. Two models are presented. Model AII: 1 estimates the effects of torture on counterinsurgent violence in a setting where there had been zero counterinsurgent killings in the previous six months. This model is taken to be representative of a context in which there was little coercive capacity built up.[2] Model AII: 2 estimates the effects of torture in settings where there was at least one person was killed by counterinsurgents in each of the previous six months. This model suggests torture is taking place in an area where the state has built up a high degree of coercive capacity.

[2] Political control models of counterinsurgency (e.g., Kalyvas 2006) suggest that we can observe zero counterinsurgent killings in two settings — when the state has no control and when the state has strong control. As a result, some of the months in which torture took place, but in which there was no counterinsurgent killings over the previous six months may be settings in which the state was strongly present, rather than absent. However, Guatemala was a particularly weak state and the majority of the settings in which there was zero counterinsurgent violence were sites where the state was simply not present. At the same time, a changeover from settings where zero violence was occurring to torture and a subsequent increase in violence is more easily explained in terms of tactical shifts in light of torture's outcomes than to structural dynamics associated with coercive capacity.

Table AII: Difference-in-Difference Estimates of Counterinsurgent Killings in Two Strategic Contexts

	Counterinsurgent Killings			
	AII: 1		AII: 2	
	Local		Local	
	Zero Prior Counterinsurgent Killings		High Prior Counterinsurgent Killings	
	Point Estimate (Standard Error)	95% CI	Point Estimate (Standard Error)	95% CI
δ **ATET (T+1)**	**134.85* (60.62)**	**14.93, 254.77**	**632.24*** (169.24)**	**295.43, 969.04**
γ Treatment Group			-418.58* (168.95)	-754.30, -82.87
λ T+1	0.08 (41.23)	-81.49, 81.65	-600.54*** (163.37)	-985.67, -275.41
Intercept			609.68*** (164.80)	281.71, 937.65
N	134		162	
* P<0.05, ** P<0.01, ***0.001				

It is important to note two things about these models before interpreting their results. First, their samples are slightly different. With regards to Model AII: 1, there was a large enough quantity of municipality months not experiencing torture in this category (58,758) to generate sample of genetically matched treatment and control units. But with regards to Model AII: 2, the sample of potential control units was quite small (104), and so there was no genetically matched sample generated from this pool. Instead, a sample of all treatment and control units was taken from the original matched sample.[3] Second, their construction is somewhat different as well. In Model AII: 1, by the construction of

[3] An alternative estimation examined this model using all municipality-months witnessing at least one act of counterinsurgent killing over in each of the last six months. Results proved substantively similar.

the sample there was zero counterinsurgent killings in the month preceding torture. As a result, the treatment group and control group have the same quantity of violence in the month preceding the intervention. A Treatment Group control variable would not capture any additional information not recorded by the ATET and it is removed from the model. This model also does not contain an intercept because the period preceding the intervention had zero counterinsurgent killing (again by construction of the sample). By comparison, the sample for Model AII: 2 contains variation in the quantity of the killings occurring prior to intervention. To control for this variation, the model includes both the Treatment Group control and the intercept.

The expectation is that if the observed relationship between torture and subsequent counterinsurgent violence was being driven by a buildup of coercive capacity, then we should observe significant associations between these variables in the model with high prior violence (Model AII: 2), but not where the was no prior violence (Model AII: 1). But examining Table AII, this does not appear to be the case. Even in Model AII: 1, where the state had not been involved with a single killing over the previous six months, engaging in torture is shown to be related to a significant increase in subsequent counterinsurgent killings. It is the case that the increase in killings is dramatically larger where the state had been actively engaged in violence during the previous six months, which should suggests that prior coercive capacity is indeed conducive to engaging in further violence later on. But the evidence also demonstrates that this prior violence is not necessary to witness the increased application of counterinsurgent killings after torture. This evidence suggests that the association between torture and subsequent

counterinsurgent killings is being driven by counterinsurgent responses to torture and not merely by a spurious relationship to a previous buildup of coercive strength.

Part III: Torture Incidents By Source

Table AIII displays the source material for each of the torture events recorded in the dataset. Data employed in this study's analyses—newspapers, human rights reports and witness testimonies. As illustrated in Davenport and Ball (2002), each of the different data sources possesses its own biases, but the overlap between the biases of the different sources was minimal.

Understanding the where the torture data is coming from can inform interpretations of the study's results. For example, we know that newspapers tend to have a strong urban bias. As a result, if the majority of the torture incidents were those recorded by the newspapers, one could expect that the analysis was more representative of conflict dynamics operating in urban environments, rather than rural regions.

Table AIII: Torture Incidents by Source

Source	Number of Incidents	Number of Victims	Average Number of Victims per Incident
Newspaper Reporting	9	11	1.22
Human Rights Reports	85	385	4.52
Witness Reporting	203	287	1.41

Looking at Table AIII, this does not appear to be the case. In face, very few incidents of torture appear to have been picked up by the Guatemalan press. Witness reports contained data on a far larger number of incidents. More than 2/3 of the torture incidents were recorded in witness statements. Human rights reports were the second

most informative source, producing information on slightly more than a quarter of the incidents.

This provides some clues on how much was known about the different acts of torture as they occurred. Specifically, it suggests that information on torture was highly localized, rather than broadcast throughout the country. We might therefor expect the analysis of local counterinsurgent and insurgent responses to torture to be a better test of how torture impacts subsequent strategies. The theory also predicts localized, unit level responses. Still, it is important to allow for the possibility for a regional response and examine this potential empirically. Given these facts, it might be useful to think of the regional response variables as a noisier test of torture's effects. Local social networks can carry information from one municipality to its neighbors. Violence might also shift to surrounding municipalities in light of torture.

One other item to note is that the different sources capture different scales of torture. Looking at the average number of victims per incident, witness reports are recording incidents that average between one and two victims. Human rights reports, on the other hand, average between four and five victims per recorded event.[4] It could plausibly be asked if these two types of incidents are capturing different forms of torture and whether these different forms have differing effects on subsequent insurgent and counterinsurgent violence.

Tables AIV, AV and AVI examine these questions empirically. The three tables replicate the analysis from Table II in the main text, except that they limit the identification of torture to municipality months experiencing torture identified in the

[4] Bias in human rights reporting towards larger incidents has been identified previously in Davenport and Ball (2002)

witness statements (Table AIV), identified in human rights reports (Table V), or identified in newspaper reports (Table AVI).[5]

Table AIV: Witness Statements – 1 Month Pre- and Post-

	Insurgent Killings				Counterinsurgent Killings			
	AIV: 1		AIV: 2		AIV: 3		AIV: 4	
	Local		Regional		Local		Regional	
	Point Estimate (Standard Error)	95% CI	Point Estimate (Standard Error)	95% CI	Point Estimate (Standard Error)	95% CI	Point Estimate (Standard Error)	95% CI
δ ATET (T+1)	**-0.01 (0.04)**	**-0.08, 0.07**	**-5.88 (8.71)**	**-23.04, 11.27**	**79.62* (38.57)**	**3.71, 155.54**	**3.51 (4.73)**	**-5.80, 12.83**
γ Treatment Group	0.03 (0.03)	-0.02, 0.08	-9.11 (6.44)	-21.78, 3.57	7.68, (39.04)	-69.15, 84.52	-7.40 (4.21)	-15.68, 0.87
λ T+1	0.00 (0.01)	-0.03, 0.03	2.95 (8.13)	-13.05, 18.95	-75.31*** (27.25)	-128.95, -21.68	0.99 (3.16)	-5.22, 7.21
Intercept	0.01 (0.01)	-0.01, 0.03	12.81* (5.69)	1.61, 24.02	99.82*** (26.94)	46.79, 152.85	21.54*** (2.59)	16.44, 26.64
N	582		582		582		582	
* P<0.05, ** P<0.01, ***0.001								

[5] It should be noted that these three analyses drop different treated units from the sample based on the source that identified them, rather than rematching a new sample using smaller samples of treated units. This was done to facilitate comparison to the newspaper sample, which had too few treated units to generate a meaningful analysis on its own. Any systematic differences between the reduced sample of treated units in each model and the control sample that was employed will be controlled for through the difference-in-difference design.

Table AV: Human Rights Reports – 1 Month Pre- and Post-

	Insurgent Killings				Counterinsurgent Killings			
	AV: 1		AV: 2		AV: 3		AV: 4	
	Local		Regional		Local		Regional	
	Point Estimate (Standard Error)	95% CI	Point Estimate (Standard Error)	95% CI	Point Estimate (Standard Error)	95% CI	Point Estimate (Standard Error)	95% CI
δ ATET (T+1)	**0.93 (0.92)**	**-0.88, 2.73**	**-3.04 (12.94)**	**-28.56, 22.47**	**109.23+ (62.49)**	**-13.81, 232.29**	**6.54 (6.36)**	**-6.02, 19.10**
γ Treatment Group	-0.01 (0.01)	-0.03, 0.01	-0.13 (8.60)	-16.83, 17.09	-60.49+ (31.97)	-123.54, 2.56	5.44 (6.30)	-6.00, 17.88
λ T+1	0.00 (0.01)	-0.03, 0.03	2.95 (8.15)	-13.12, 19.03	-75.32*** (27.29)	-129.14, -21.48	0.99 (3.17)	-5.23, 7.25
Intercept	0.01 (0.01)	-0.01, 0.03	12.81* (5.69)	1.57, 24.05	99.82*** (26.99)	46.60, 153.07	21.54*** (2.60)	16.41, 26.67
N	408		408		408		408	
+<0.10, * P<0.05, ** P<0.01, ***0.001								

Table AVI: Newspaper Reports – 1 Month Pre- and Post-

	Insurgent Killings				Counterinsurgent Killings			
	AVI: 1		AVI: 2		AVI: 3		AVI: 4	
	Local		Regional		Local		Regional	
	Point Estimate (Standard Error)	95% CI	Point Estimate (Standard Error)	95% CI	Point Estimate (Standard Error)	95% CI	Point Estimate (Standard Error)	95% CI
δ ATET (T+1)	**-0.00 (0.02)**	**-0.03, 0.03**	**-2.95 (8.16)**	**-19.07, 13.16**	**75.31*** (27.34)**	**21.34, 129.28**	**0.98 (3.17)**	**-7.24, 5.28**
γ Treatment Group	-0.01 (0.01)	-0.03, 0.01	-12.81 (5.71)	-16.83, 17.09	-99.82*** (27.03)	-153.19, -46.46	-21.52*** (2.60)	--26.66, 16.38
λ T+1	0.00 (0.01)	-0.03, 0.03	2.95 (8.16)	-13.16, 19.07	-75.31*** (27.34)	-129.28, -21.34	0.99 (3.17)	-5.27, 7.26
Intercept	0.01 (0.01)	-0.01, 0.03	12.81* (5.71)	1.55, 24.09	99.82*** (27.03)	46.46, 153.19	21.54*** (2.60)	16.40, 26.68
N	334		334		334		334	
* P<0.05, ** P<0.01, ***0.001								

The three tables produce results that are largely consistent with the main text results. Across the analyses, torture is not related to any significant depreciation in insurgent violence. For the human rights reports and newspaper samples, torture was associated with a significant increase in subsequent counterinsurgent violence at the 0.05 level. For the human rights reports sample, the significance of this relationship was only 0.82. This would still meet conventional standards of statistical significance in a one-tailed directional test, however.

The evidence presented in the analyses of tortures effects using reduced samples based on the different identification sources does not present any strong evidence suggesting that biases in the different source material could be impacting the results of this study.

Part AIV: Cross-Sectional Time-Series Replication

The final section of this Appendix replicates the main text analysis using cross-sectional time-series OLS. The main text results are produced using a matched-sampled difference-in-difference research design. Table AVII presents a replication examining whether the results would appear differently if the analysis employed a more traditional research design. The full set of municipality months are analyzed.

Table AVII: Cross-sectional Time-series Estimates of Insurgent and Counterinsurgent Killings

	Insurgent Killings				Counterinsurgent Killings			
	AVII: 1		AVII: 2		AVII: 3		AVII: 4	
	Local		Regional		Local		Regional	
	T+1		T+1		T+1		T+1	
	Point Estimate (Standard Error)	95% CI	Point Estimate (Standard Error)	95% CI	Point Estimate (Standard Error)	95% CI	Point Estimate (Standard Error)	95% CI
Torture								
	-4.18 (4.43)	**-12.86, 4.49**	**1.29 (2.17)**	**-2.96, 5.51**	**39.31* (19.23)**	**1.61, 77.00**	**3.32 (2.55)**	**-1.68, 8.32**
Counter-insurgent Killings								
T-1	3.21 (3.19)	-3.05, 9.47	2.43** (1.00)	0.467, 4.397	9.00** (2.96)	3.19, 14.81	-0.11 (0.94)	-1.94, 1.72
T-2	2.75 (2.73)	-2.59, 8.09	0.01 (0.87)	-1.69, 1.70	5.93** (2.39)	1.25, 10.62	0.80 (0.90)	-0.96, 2.56
T-3	2.66 (2.63)	-2.50, 7.82	2.28 (2.47)	-2.55, 7.11	4.28* (2.07)	0.22, 8.34	-1.66* (0.84)	-3.30, -0.01
T-4	2.62 (2.60)	-2.47, 7.71	-0.30 (0.85)	-1.95, 1.36	4.65** (1.92)	0.88, 8.42	-1.18 (0.80)	-2.75, 0.40
T-5	2.55 (2.53)	-2.42, 7.51	-0.71 (0.68)	-2.04, 0.63	2.81 (1.81)	-0.73, 6.35	-0.62 (0.78)	-2.14, 0.90
T-6	2.84 (2.83)	-2.71, 8.38	-0.87 (0.69)	-2.21, 0.48	3.16 (2.39)	-1.52, 7.84	1.63 (1.50)	-1.32, 4.58
Insurgent Killings								
T-1	-4.04 (4.21)	-12.29, 4.20	1.82 (2.68)	-3.43, 7.06	39.89 (25.23)	-9.56, 89.35	-2.06 (1.79)	-5.58, 1.44
T-2	-4.14 (4.12)	-12.30, 4.03	-2.84* (1.38)	-5.55, -0.14	19.25 (20.29)	-20.52, 59.03	-0.81 (2.08)	-4.89, 3.27
T-3	-4.65 (4.75)	-13.97, 4.67	5.47 (7.83)	-9.87, 20.81	10.82 (16.15)	-20.82, 42.47	-3.56 (2.78)	-9.01, 1.89
T-4	-4.23 (4.45)	-13.02, 4.42	-0.59 (1.64)	-3.82, 2.63	4.92 (16.34)	-27.11, 36.95	2.72 (2.08)	-1.36, 6.80
T-5	-4.61 (4.63)	-13.68, 4.45	-3.00** (1.23)	-5.41, -0.60	-11.61 (9.83)	-30.86, 7.65	-1.23 (1.51)	-4.19, 1.73

T-6	-4.67 (4.65)	-13.78, 4.45	-3.05** (1.05)	-5.11, -0.98	1.19 (15.53)	-29.24, 31.62	-1.71 (1.89)	-5.43, 2.01
Count of Past Torture	0.11 (0.11)	-0.10, 0.32	-0.08* (0.04)	-0.16, -0.01	-0.06 (0.15)	-0.35, 0.24	-0.12*** (0.03)	-0.18, -0.06
Spatial Lag Torture	-1.42 (1.41)	-4.19, 1.36	-3.38*** (0.68)	-4.72, -2.04	-1.53 (1.56)	-4.59, 1.54	1.24 (1.44)	-1.59, 4.07
Spatial Lag Counter-insurgent Killings	0.02 (0.02)	-0.02, 0.05	-0.00 (0.01)	-0.02, 0.01	0.14** (0.06)	0.03, 0.25	0.44*** (0.03)	0.38, 0.49
Spatial Lag Insurgent Killings	-0.01 (0.01)	-0.04, 0.01	0.05 (0.06)	-0.07, 0.16	0.03 (0.05)	-0.06, 0.12	0.25** (0.09)	0.08, 0.42
% Indigenous 1973	-0.06 (0.06)	-0.18, 0.06	0.13 (0.12)	-0.09, 0.36	0.36** (0.14)	0.08, 0.64	0.33* (0.18)	-0.02, 0.68
Population 1973 (Log)	-0.19 (0.19)	-0.56, 0.18	0.00 (0.03)	-0.06, 0.06	-0.17 (0.13)	-0.41, 0.08	0.02 (0.04)	-0.06, 0.10
Intercept	1.61 (1.61)	-1.54, 4.76	-0.20 (0.36)	-0.91, 0.51	1.17 (1.16)	-1.10, 3.44	-0.30 (0.50)	-1.29, 0.68
N	67,275		67,275		67,275		67,275	
Robust Standard Errors in Parentheses. Department and year fixed effects omitted from presentation. * P<0.05, ** P<0.01, ***0.001								

The four models presented in Table AVII replicate the analysis presented in Table II of the main text, examining the relationship between torture committed at time t and insurgent and counterinsurgent violence occurring at time t+1. The models control for a number of pretreatment variables thought to influence both the application of torture and subsequent violence. Where the models in the main text use these variables as part of the matching process, here they are employed as covariates.

The first thing to note is that the results linking torture to subsequent violence are largely consistent with those presented in the main text analysis. Torture is not significantly related to decreases in insurgent killings. It is significantly related to

increased counterinsurgent killings in the locality, though the results for regional counterinsurgent killings are insignificant.

These results confirm the principal conclusions form the main text. Torture is not related to any significant decreases in insurgent killings, but torture is correlated with significant increases in counterinsurgent killings.