Appendix for "Soldiers' Dilemma: Foreign Military Training and Liberal Norm Conflict"

May 2022

A1. Survey Design and Sampling Procedure

Respondents for the Armed Forces of Liberia (AFL) survey were selected through a multistage sampling process.[1] The first stage identified all of the military bases where AFL personnel were stationed throughout the country. There were five main installations across three counties: Camp Tubman (Bong); EBK Barracks (Margibi); and Camp Ware, Barclay Training Center, and Bushrod Island (Montserrado).[2] Installations housed multiple units. At each installation, the enumerator team presented unit commanders with a letter from the AFL Deputy Chief of Staff that instructed the commanders to assist with drawing a random sample from their unit rosters.

Next, the survey team used a random number generator to draw a simple random sample of the target number of interviews from each unit roster. Target numbers were chosen in proportion to each unit's size. The personnel officers then matched the random numbers to the corresponding names in their rosters to create the sample. After drawing the sample, the personnel officers brought the selected respondents to a central location, where the enumerator team explained the purpose of the survey and asked respondents who were willing to participate to schedule individual interview times.[3]

Interviews were conducted onsite at each installation in a large, central location with privacy for individual interviews. Informed consent was obtained separately from each participant prior to conducting the interview. The interviews were conducted face-to-face by the enumerator team in English or Liberian English (using tablets) and took approximately 45 minutes to complete. The survey included around 80 questions about soldiers' backgrounds, experiences in the military, and attitudes towards various political and democratic norms, as well as an experiment to test the effects of exposure to liberal norm conflict.

To protect confidentiality, no names, unit information, or other personally identifying information were recorded. To further assure soldiers that their responses were anonymous and encourage truthful answers, I took two additional steps. First, demographic questions (e.g., education, ethnic background, wealth, etc.) were asked at the end of the survey, following

[1] The Columbia University Institutional Review Board approved this study (protocol AAAR6372).
[2] Several smaller installations in Lofa, Grand Bassa, Grand Gedeh, and Montserrado were excluded. Small units rotate through these locations, but are not stationed there permanently, with the exception of Grand Gedeh.
[3] The participation rate was around 99 percent; a few respondents opted not to meet with the enumerators. This kind of high participation rate is common in the Liberian context. See Sabrina Karim, "Restoring Confidence in Post-Conflict Security Sectors: Survey Evidence from Liberia on Female Ratio Balancing Reforms," *British Journal of Political Science* Vol. 49, No. 3 (2019), pp. 799–821.

insights from U.S. army survey research.[4] Second, no officers or non-commissioned officers in charge were present during the interviews, which might have made respondents reluctant to speak freely. At the end of the survey, soldiers were offered the opportunity to provide additional comments. Many of these comments were candid complaints about their leadership or living conditions (e.g., "Our leaders from the Chief of Staff are just after themselves"), suggesting that they were not unduly concerned that their answers would be scrutinized by superiors.

Safeguarding respondents' confidentiality is part of the ethical considerations that come with survey research, many of which focus on how participants are treated and protected.[5] The informed consent process ensured that respondents understood the potential risks (minimal) and benefits (accruing to society) that would come from their participation in the survey, which was voluntary. Respondents were free to skip questions they did not want to answer, although missingness rates were negligible. Ethical considerations can also arise with how the data are used and results communicated. To this end, I took steps to ensure that the survey provided benefits to Liberian society and the international community involved in security sector reform in Liberia. The survey included questions designed to gauge command and unit climate, individual morale and satisfaction, as well as patterns of recruitment and retention. I prepared a policy report for AFL leadership that summarized these findings, providing insights on their force that they had not been able to collect previously. This report was also provided to U.S. embassy and UN Mission in Liberia (UNMIL) leadership, supporting their efforts to evaluate security sector reform in Liberia.

Finally, although the survey sample comprised only 270 respondents, it represented around 15 percent of the overall force according to roster numbers. Figure A1 outlines the AFL organization as envisioned in 2007. As of 2017, the force size was around 1,800 personnel.

Figure A1. 2007 AFL Table of Organization

AFL PERSONNEL SUMMARY

UNIT	PERSONNEL
HEADQUARTERS AND HEADQUARTERS COMPANY, 23RD INFANTRY BRIGADE	113
1ST BATTALION, 23RD INFANTRY	680
2ND BATTALION, 23RD INFANTRY	680
1ST MILITARY POLICE COMPANY	105
1ST ENGINEER COMPANY	220
BRIGADE TRAINING UNIT (BTU)	162
AFL BAND	40
	2000

[4] Joel M. Savell, "An Investigation of Respondent Confidentiality Concerns in Army Surveys: Data from Ten Focus Groups," ARI Research Report 1650 (Alexandria, Va.: U.S. Army Research Institute for the Behavioral and Social Sciences, October 1993).

[5] Lisa M. Gilman, "Survey Ethics," in Paul J. Lavrakas, ed., *Encyclopedia of Survey Research Methods* (SAGE Publications, Inc., 2008), https://www.doi.org/10.4135/9781412963947.

A2. Descriptive and Summary Statistics

- Figure A2 shows the sample distribution of ranks by initial AFL recruitment batch. In the sample, as in the AFL population, officers and non-commissioned officers (NCOs) are concentrated in batches 1-3.[6]
- Table A1 shows the sample distribution of tribal affiliations compared to the national distribution of tribal affiliations as reported in the 2008 Population and Housing Census conducted by the Liberia Institute of Statistics and Geo-Information Services. Although the AFL decided early on to avoid tribal quotas in recruitment, the table suggests that the new military is broadly representative of the national population.
- Table A2 depicts the outcome measures, variable types, and range of values.
- Figure A3 summarizes the experimental design.
- Table A3 shows summary statistics for the key variables in the main analyses, the analyses that explore the mechanisms, and the robustness checks.
- Figure A4 presents a correlation matrix for the outcome measures.
- Table A4 shows balance statistics for the treatment and control groups. Balance assessment was conducted using the MatchIt package in R.[7] Reported statistics include the standardized mean differences (SMDs), variance ratios, and empirical Cumulative Distribution Function (CDF) statistics. SMDs that are close to zero and variance ratios that are close to one represent better balance.[8] The results suggest a balanced distribution of covariates across experimental groups.
- Figure A5 provides visualization (histograms) of the distribution of each covariate across treatment and control groups.

[6] There are two reasons for this distribution of rank. First, the U.S. decision to disband the old AFL created the need to quickly groom new leaders and led to rapid promotions for the earliest recruits that slowed down with later batches. Second, the Americans stopped offering the requisite leader development courses (e.g., Officer Candidate School) before the Liberians were prepared to conduct their own training. Without the ability to offer courses, the AFL stopped producing NCOs or officers on their own.

[7] Daniel Ho, Kosuke Imai, Gary King, and Elizabeth A. Stuart, "MatchIt: Nonparametric Preprocessing for Parametric Causal Inference," *Journal of Statistical Software* Vol. 42, No. 08 (2011), pp. 1–28.

[8] Noah Greifer, "Assessing Balance," *The Comprehensive R Archive Network (CRAN)*, MatchIt vignette, December 15, 2020, https://cran.r-project.org/web/packages/MatchIt/vignettes/assessing-balance.html.

Figure A2. Sample Distribution of Ranks by Batches

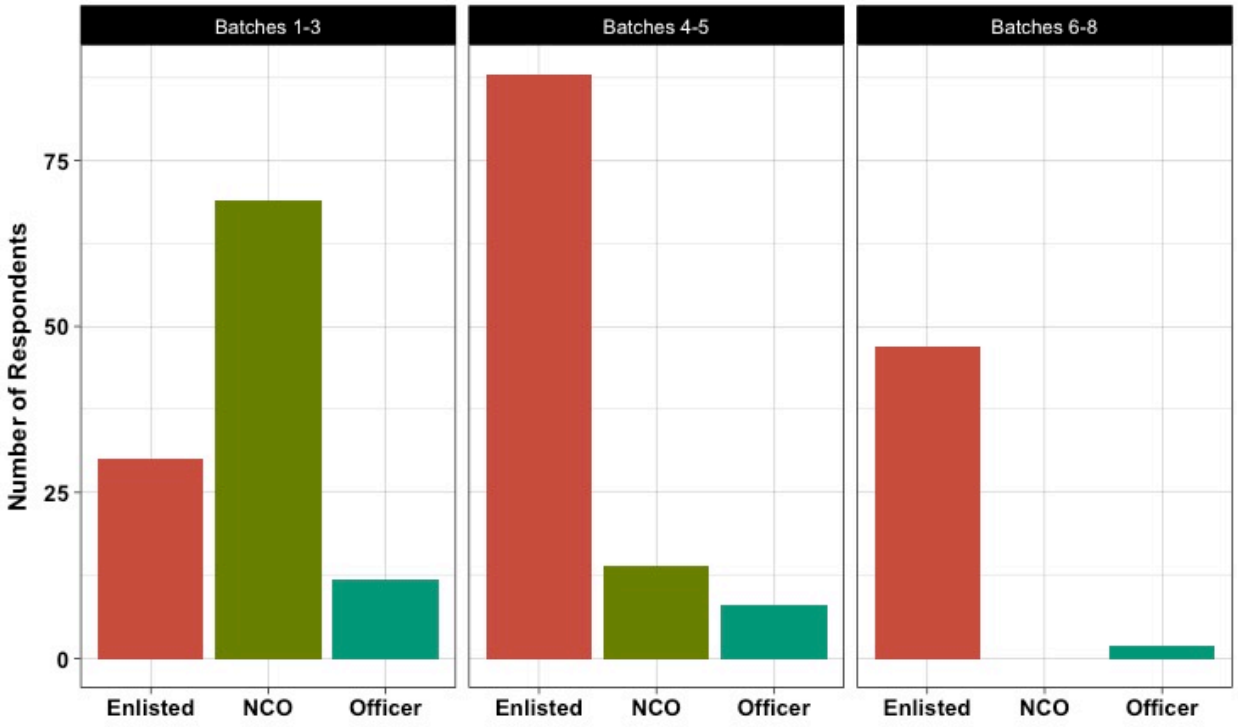


Table A1. Sample and National Distributions of Tribal Affiliation

	Survey Sample	2008 Census
Group	Percentage	Percentage
Kpelle	14.8%	20.3%
Bassa	14.8%	13.4%
Grebo	11.9%	10%
Kru	9.6%	6%
Lorma	9.3%	5.1%
Gio	5.2%	8%
Kissi	4.4%	4.8%
Mano	3.7%	7.9%
Gola	1.9%	4.4%
Other groups	24.4%	20.1%

Table A2. Outcome Measures

Concept	Variable	Type	Value
Human rights	Prioritize security of the people	Scale	1 (not at all) to 4 (a lot)
Civilian control	Always prefer democracy	Binary indicator	1 = yes, 0 = no
	Support army rule	Scale	1 (strongly disagree) to 5 (strongly agree)
	Support one-party rule	Scale	1 to 5
	Support one-person rule	Scale	1 to 5
Cohesion	Prioritize cohesion	Binary indicator	1 = yes, 0 = no

Figure A3. Experimental Design

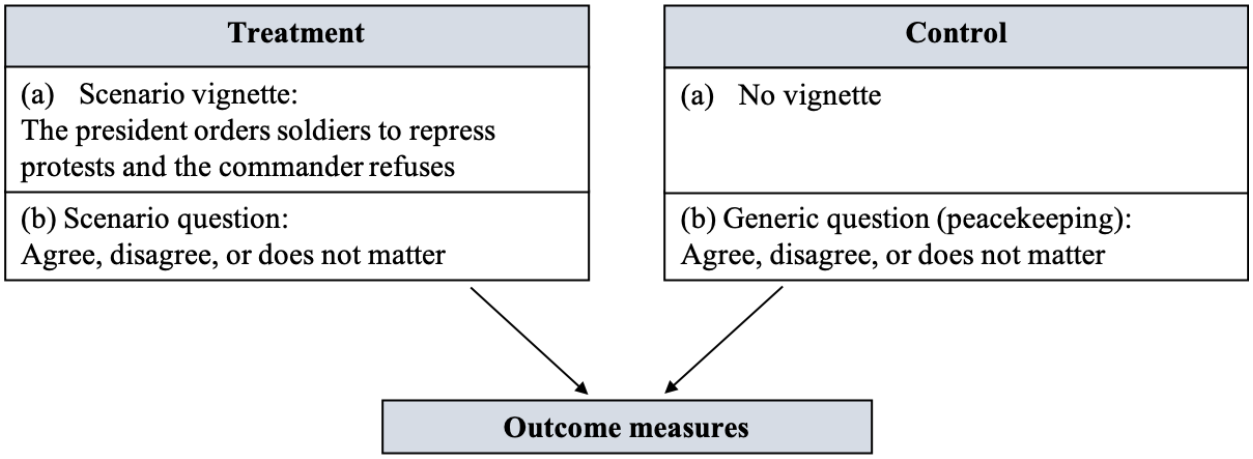


Table A3. Summary Statistics for Key Variables

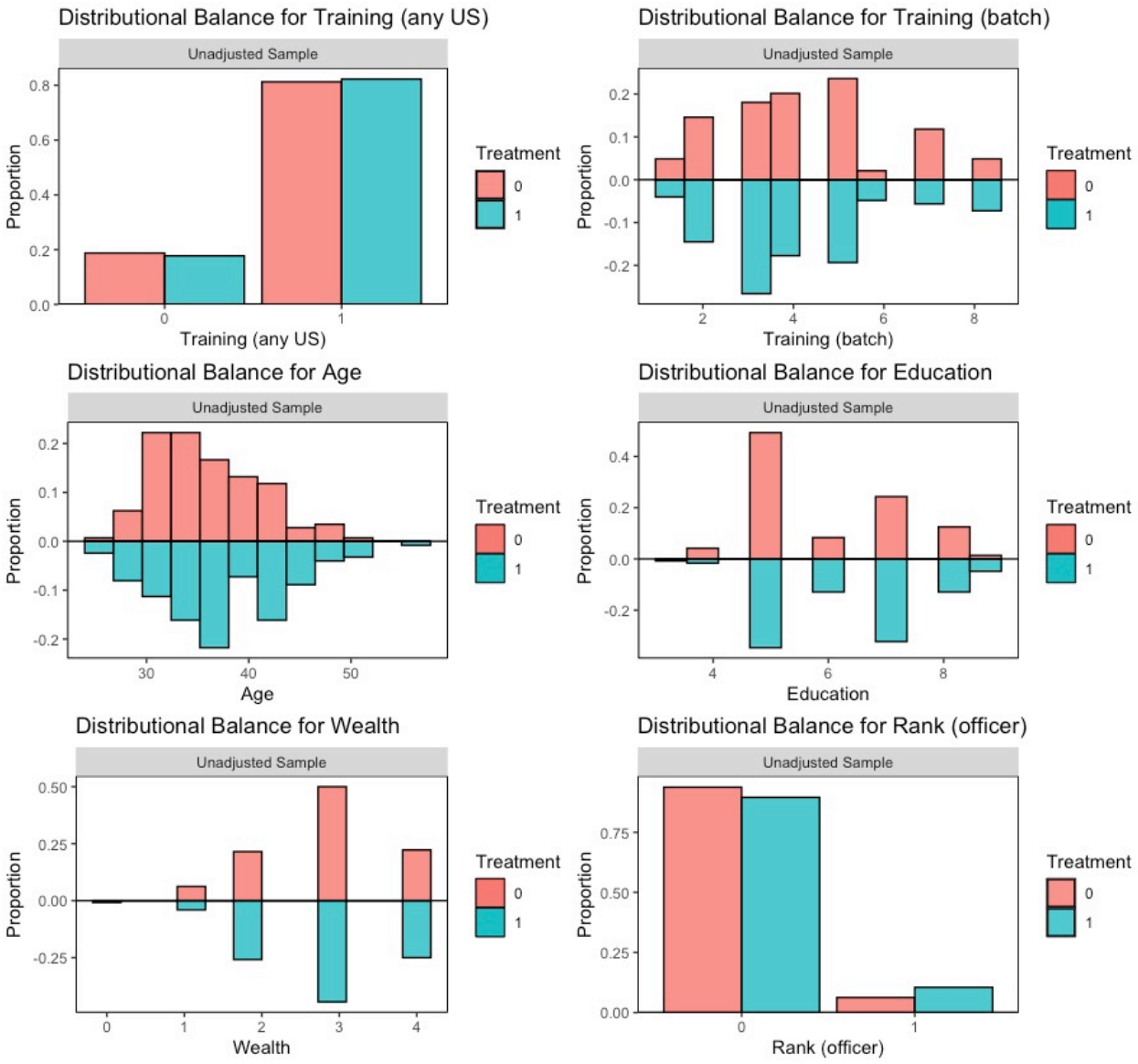
Variable	N	Mean	St. Dev.	Min	Median	Max
Prioritize Human Rights	264	3.3	1.0	1.0	4.0	4.0
Democracy	268	0.8	0.4	0	1	1
Army Rule	260	2.5	1.4	1.0	2.0	5.0
One-party Rule	260	1.7	0.9	1.0	1.0	5.0
One-person Rule	261	1.4	0.7	1.0	1.0	5.0
Prioritize Cohesion	268	0.2	0.4	0	0	1
Training (any/none)	268	0.8	0.4	0	1	1
Training (AFL batch)	268	4.1	1.8	1	4	8
Education	268	6.1	1.3	3	6	9
Wealth	268	2.9	0.8	0	3	4
Rank (officer)	268	0.1	0.3	0	0	1
Equality	267	2.4	1.4	1.0	2.0	5.0
Social Cohesion	268	1.7	1.0	1	1	5
Task Cohesion	268	1.6	0.7	1	1	5
Motto	268	0.1	0.3	0	0	1
Training (full/partial/none)	268	2.2	0.7	1	2	3
Age	268	36.8	5.8	25	37	56

Figure A4. Correlation Matrix of Outcome Measures

Table A4. Balance Statistics

Statistic	Mean Treat.	Mean Control	Std. Mean Diff.	Var. Ratio	eCDF Mean	eCDF Max
Training (any US)	0.8226	0.8125	0.0264	.	0.0101	0.0101
Training (batch)	4.0726	4.2083	−0.0749	0.9840	0.0273	0.0766
Age	37.6210	36.1667	0.2311	1.4544	0.0609	0.1431
Education	6.3226	5.9583	0.2821	1.0851	0.0543	0.1638
Wealth	2.8871	2.8819	0.0060	1.0838	0.0157	0.0287
Rank (officer)	0.1048	0.0625	0.1382	.	0.0423	0.0423

Figure A5. Distribution of Covariates Across Treatment and Control Groups



A3. Additional Results and Robustness Tests

- Table A5 replicates the results for the two binary outcome measures presented in Table 1 in the main text (Difference in Means for Respondents Assigned to Treatment and Control). Because the "prefer democracy" and "prioritize cohesion" measures are binary, I use logistic regression as an alternative specification. Table A5 demonstrates that the results are robust to either choice of estimator.
- Table A6 presents the models used to estimate the conditional treatment effects shown in Figure 3 in the main text (Effects of Norm Conflict, Conditioned on Level of Training). For the two binary outcome measures, I report the results of linear probability models with robust standard errors to account for heteroskedasticity. The results are robust to the alternative specification of logistic regression models, which are presented for reference in Table A7.
- Table A8 replicates the models in Table A6, but uses a trichotomous "training" variable instead, which takes a value of 0 for respondents in batches 6-8 (no training); 1 for batches 4-5 (partial training); and 2 for batches 1-3 (full training). I use these models to estimate conditional treatment effects, presented in Figure A6.
- Table A9 replicates model 5 in Table 2 in the main text (Training and Support for Liberal Norms), using a logistic regression model. The results are robust to either estimator. Table A10 replicates the models in Table 2, but adds a control variable for respondent age. The results are mostly robust to inclusion of the age control. The "training" coefficient signs remain unchanged, but for two coefficients statistical significance now falls below conventional levels. This is not surprising given that "age" is somewhat highly correlated with "training" ($r = 0.52$).
- Table A11 presents conditional models that take the full-sample baseline models from Table A6 and add the "education," "wealth," and "rank" control variables. The results are mostly robust to inclusion of the controls. The direction of the coefficients for the "training" * "treatment" interaction term remains unchanged, although the coefficient in model 4 dips just below the threshold for statistical significance ($p < 0.104$)
- Table A12 presents the baseline models used to generate conditional treatment effects for Figure 4 in the main text (Conditional Treatment Effects of Unit-level Cohesion). I report the results of logistic regression models. The results are robust to estimation as linear probability models with robust standard errors.
- Table A13 presents the difference in means across treatment and control groups for respondents who answered the open-ended motto question with words or phrases that invoked cohesion. Because the dependent variable is binary, I use a linear probability model with robust standard errors. The results are robust to using a logistic regression model (Table A14). Figure A7 shows the results with 95 percent confidence intervals.

Table A5. Difference in Means for Respondents Assigned to Treatment and Control (Logistic Regression)

	Dependent variable:	
	Prefer Democracy	Prioritize Cohesion
	(1)	(2)
Treatment	−0.039	0.858***
	(0.312)	(0.304)
Constant	1.466***	−1.713***
	(0.214)	(0.232)
Observations	268	268
Log Likelihood	-130.416	-137.137
Akaike Inf. Crit.	264.832	278.273
Note:		*p<0.1; **p<0.05; ***p<0.01

Table A6. Effects of Norm Conflict, Conditioned on Level of Training

	Dependent variable:					
	OLS Human rights	*OLS* Army rule	*OLS* One-party rule	*OLS* One-person rule	*LPM* Democracy	*LPM* Cohesion
	(1)	(2)	(3)	(4)	(5)	(6)
Training	0.339	−0.519*	−0.379*	−0.337**	0.225**	−0.040
	(0.220)	(0.306)	(0.206)	(0.151)	(0.098)	(0.082)
Treatment	0.138	−0.296	−0.672**	−0.291	0.143	0.133
	(0.300)	(0.419)	(0.285)	(0.202)	(0.129)	(0.124)
Training * Treatment	−0.453	0.573	0.674**	0.369*	−0.184	0.016
	(0.332)	(0.461)	(0.312)	(0.223)	(0.138)	(0.136)
Constant	3.148***	2.846***	2.040***	1.720***	0.630***	0.185**
	(0.199)	(0.276)	(0.187)	(0.137)	(0.093)	(0.075)
Observations	264	260	260	261	268	268
R^2	0.022	0.015	0.023	0.019		
Adjusted R^2	0.011	0.003	0.011	0.008		
Note:						*p<0.1; **p<0.05; ***p<0.01

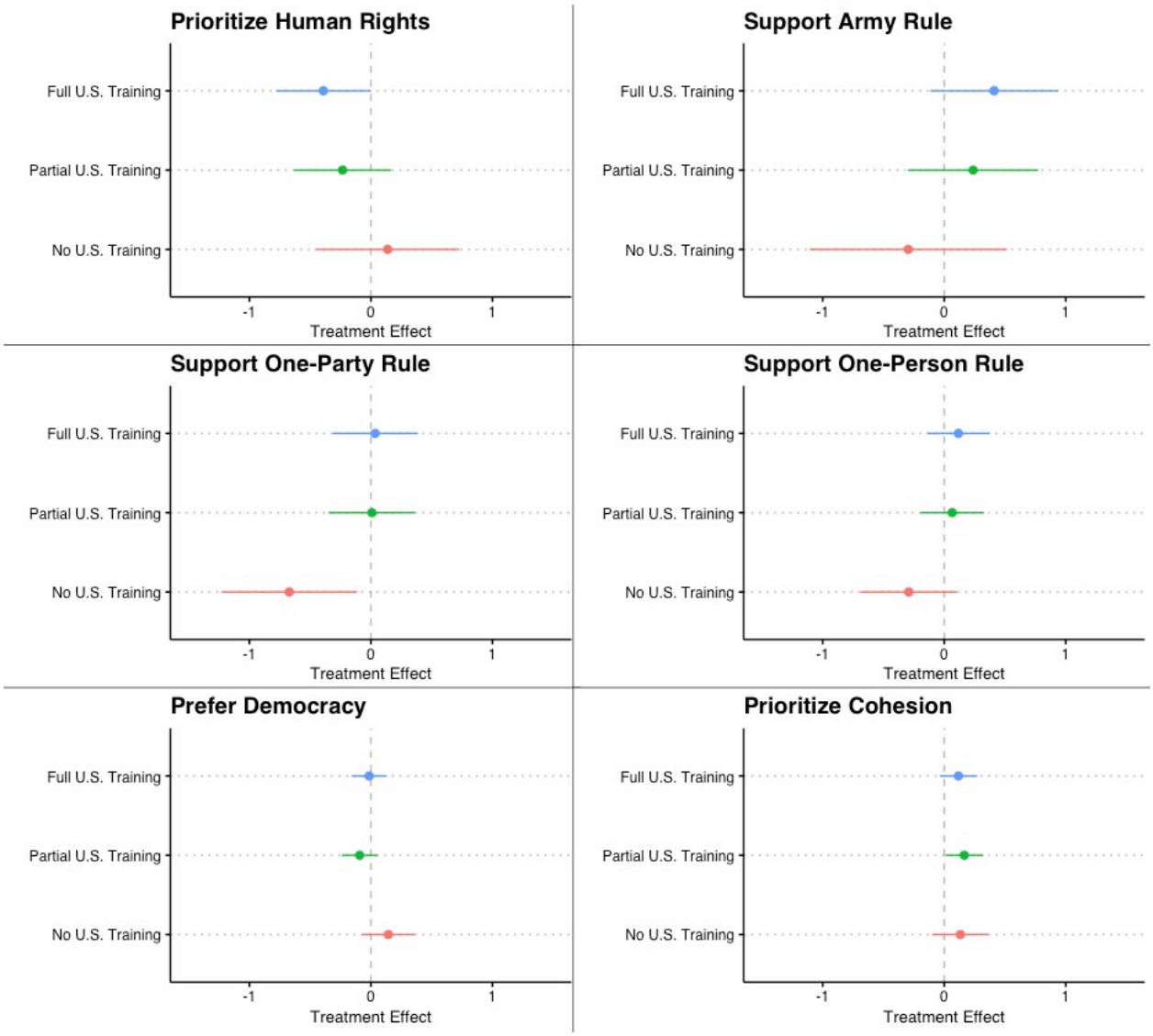
Table A7. Effects of Norm Conflict, Conditioned on Level of Training (Logistic Regression)

	Dependent variable:	
	Democracy	Cohesion
	(1)	(2)
Training	1.241***	−0.290
	(0.477)	(0.561)
Treatment	0.693	0.719
	(0.646)	(0.675)
Training * Treatment	−0.991	0.177
	(0.742)	(0.756)
Constant	0.531	−1.482***
	(0.399)	(0.495)
Observations	268	268
Log Likelihood	-127.120	-136.982
Akaike Inf. Crit.	262.240	281.965
Note:	*p<0.1; **p<0.05; ***p<0.01	

Table A8. Effects of Norm Conflict, Conditioned on Level of Training (Trichotomous Training Variable)

	Dependent variable:					
	OLS Human rights	*OLS* Army rule	*OLS* One-party rule	*OLS* One-person rule	*LPM* Democracy	*LPM* Cohesion
	(1)	(2)	(3)	(4)	(5)	(6)
Full Training	0.370	−0.846**	−0.512**	−0.437***	0.278***	0.019
	(0.244)	(0.334)	(0.226)	(0.166)	(0.101)	(0.093)
Partial Training	0.312	−0.240	−0.266	−0.252	0.180*	−0.090
	(0.238)	(0.326)	(0.221)	(0.162)	(0.105)	(0.083)
Treatment	0.138	−0.296	−0.672**	−0.291	0.143	0.133
	(0.301)	(0.414)	(0.284)	(0.202)	(0.129)	(0.124)
Full Training * Treatment	−0.529	0.707	0.707**	0.408*	−0.158	−0.015
	(0.361)	(0.493)	(0.336)	(0.241)	(0.141)	(0.149)
Partial Training * Treatment	−0.371	0.534	0.680**	0.357	−0.235	0.033
	(0.364)	(0.496)	(0.337)	(0.242)	(0.153)	(0.145)
Constant	3.148***	2.846***	2.040***	1.720***	0.630***	0.185**
	(0.199)	(0.273)	(0.186)	(0.136)	(0.093)	(0.075)
Observations	264	260	260	261	268	268
R^2	0.023	0.044	0.035	0.031		
Adjusted R^2	0.004	0.025	0.016	0.012		
Note:					*p<0.1; **p<0.05; ***p<0.01	

Figure A6. Effects of Norm Conflict, Conditioned on Level of Training (Trichotomous Training Variable) with 95 Percent Confidence Intervals



Note: The figure graphs the contrasts between treatment and control groups for soldiers with full, partial, and no U.S. training. Results shown with 95 percent confidence intervals.

Table A9. Training and Support for Liberal Norms (Logistic Regression)

	Dependent variable:
	Democracy
Training	0.358***
	(0.129)
Education	−0.158
	(0.215)
Wealth	0.280
	(0.271)
Rank	−1.438
	(0.887)
Constant	0.166
	(1.396)
Observations	144
Log Likelihood	-62.815
Akaike Inf. Crit.	135.631
Note:	*p<0.1; **p<0.05; ***p<0.01

Table A10. Training and Support for Liberal Norms, Adding Age

	Dependent variable:				
	OLS	*OLS*	*OLS*	*OLS*	*LPM*
	Human rights	Army rule	One-party rule	One-person rule	Democracy
	(1)	(2)	(3)	(4)	(5)
Training	0.066	−0.126	−0.068	−0.070*	0.053***
	(0.052)	(0.077)	(0.053)	(0.037)	(0.020)
Education	−0.035	−0.103	0.020	0.071	−0.018
	(0.075)	(0.110)	(0.075)	(0.052)	(0.028)
Wealth	0.102	−0.176	0.068	−0.009	0.038
	(0.102)	(0.147)	(0.102)	(0.071)	(0.045)
Rank	−0.235	0.221	−0.400	−0.420	−0.271
	(0.382)	(0.553)	(0.382)	(0.266)	(0.181)
Age	0.009	−0.021	−0.030*	−0.026**	−0.002
	(0.018)	(0.026)	(0.018)	(0.013)	(0.006)
Constant	2.726***	4.895***	2.873***	2.370***	0.634**
	(0.778)	(1.131)	(0.788)	(0.548)	(0.292)
Observations	144	139	140	140	144

Note: *p<0.1; **p<0.05; ***p<0.01

Table A11. Effects of Norm Conflict, Conditioned on Level of Training, Adding Controls

	Dependent variable:					
	OLS Human rights	*OLS* Army rule	*OLS* One-party rule	*OLS* One-person rule	*LPM* Democracy	*LPM* Cohesion
	(1)	(2)	(3)	(4)	(5)	(6)
Training	0.303	−0.445	−0.377*	−0.336**	0.216**	−0.012
	(0.223)	(0.308)	(0.208)	(0.152)	(0.099)	(0.078)
Treatment	0.145	−0.248	−0.649**	−0.281	0.142	0.115
	(0.305)	(0.422)	(0.288)	(0.205)	(0.131)	(0.123)
Training * Treatment	−0.479	0.566	0.664**	0.368	−0.180	0.044
	(0.335)	(0.464)	(0.315)	(0.225)	(0.139)	(0.133)
Education	0.036	−0.137*	−0.003	0.002	0.020	−0.023
	(0.058)	(0.080)	(0.053)	(0.038)	(0.020)	(0.022)
Wealth	0.075	−0.058	0.042	0.026	0.023	−0.083***
	(0.081)	(0.110)	(0.073)	(0.054)	(0.034)	(0.032)
Rank	0.005	0.221	−0.305	−0.258	−0.209*	0.095
	(0.265)	(0.362)	(0.240)	(0.175)	(0.112)	(0.102)
Constant	2.748***	3.756***	1.957***	1.651***	0.465***	0.533***
	(0.411)	(0.565)	(0.377)	(0.277)	(0.164)	(0.157)
Observations	264	260	260	261	268	268
R^2	0.029	0.029	0.031	0.029		
Adjusted R^2	0.006	0.006	0.008	0.006		
Note:						*p<0.1; **p<0.05; ***p<0.01

Table A12. Conditional Treatment Effects of Unit-level Cohesion

	Dependent variable:
	Cohesion
Treatment	−0.199
	(0.947)
Task Cohesion	−0.856*
	(0.462)
Social Cohesion	−0.044
	(0.257)
Equality	0.493***
	(0.174)
Task Cohesion * Treatment	1.465***
	(0.555)
Social Cohesion * Treatment	0.689**
	(0.349)
Equality * Treatment	−0.970***
	(0.271)
Observations	267
Log Likelihood	-125.388
Akaike Inf. Crit.	266.776
Note:	*p<0.1; **p<0.05; ***p<0.01

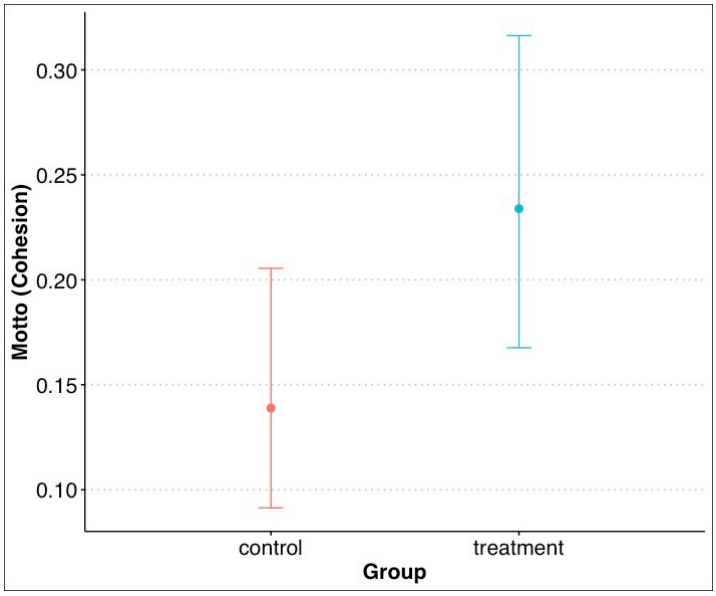
A13. Motto Difference in Means

	Dependent variable:
	Motto
Treatment	0.095**
	(0.040)
Constant	0.139***
	(0.023)
Observations	268
Note:	*p<0.1; **p<0.05; ***p<0.01

A14. Motto Difference in Means (Logistic Regression)

	Dependent variable:
	Motto
Treatment	0.638**
	(0.321)
Constant	−1.825***
	(0.241)
Observations	268
Log Likelihood	-125.469
Akaike Inf. Crit.	254.937
Note:	*p<0.1; **p<0.05; ***p<0.01

Figure A7: Motto Difference in Means with 95 percent confidence intervals



A4. Cohesion Keywords

- Table A15 reports the list of answers coded as prioritizing cohesion in response to the open-ended survey question: "What, if anything, does the AFL motto 'A force for good' mean to you?"

Table A15. Motto Responses Coded as Prioritizing Cohesion

The army is here to stay
To work together
Togetherness
Unity
Esprit de corps
The new army is for one
Team work
Lasting force
Means force for life
The force that will keep together
It means that we should hold together as an army
A force that should be there at all time
The army is for any government that comes into existence
Is the force that is together
A force to stay
The army that is there forever
An army that can't be factionalized
An army that will never fall apart, or be factionalized
To stay for good
That we are here to stay forever
To be there forever in time of peace
To stand forever
Always be available
We are there forever
A force forever
The new AFL will not be dismissed as the old AFL
Stand for one goal
The army will keep moving
Soldiers should have equal opportunity
A force that will last long
Everyone is equal
We are here to stay

We are together in everything we do
The army of unity
To be there forever
A force for every government
A unit that last forever
The new AFL is here for good
The force for life
The army that is there for every government that will come into power
Working together as a team
The army that is united
No matter what happening we will be there at all time
To stay forever
Work together to go after the same goal
Force that is built to stay together