Additional Coding Details

As the basis of our analysis of position-taking, we used the *Congressional Record*, the official record of proceedings from the United States Congress, which includes the nearly 180 days per year that Congress is in session, combining all the fragmented and scattered downloaded *Congressional Record* documents into a single file. Importantly, the government-published records often excluded key features such as the full names of speakers (e.g., providing only Mr. Jones) in ways that rendered it difficult to match the speakers' identity, partisan affiliations, and home states. We developed a simple algorithm to annotate the *Record* based on the speaker's full information.[1]

We retrieved the biographical information and term data of every United States legislator since 1780 from the United States project, an open-data initiative led by the Sunlight Foundation, GovTrack.us, the New York Times, the Electronic Frontier Foundation.[2]

Since nearly 25% of members of Congress share a last name with another congressperson in history, the algorithm checked that the first and last names matched, as did the home states, gender, and time in office.[3] Through the program, about 85% of statements in the *Record* were successfully associated with a legislator. A significant portion of the unmatched paragraphs were roll-calls and interjections from the presiding speaker, which were listed in the *Record* under "The SPEAKER" or "The ACTING PRESIDENT PRO TEMPORE."

As described in the manuscript text, we used an iterative process of multiple rounds of machine and human coding to identify and content-code our dataset of congressional floor speeches taking a position for or against the Iraq and Afghanistan wars during the troop surges of 2007-2008 and 2009-2010, respectively. Our human coders were recruited and trained using a training set of 500 speeches that were coded by the authors and coding team head. New coders then coded sets of 100 speeches for both relevance and tone, which were then checked for inter-coder reliability against the master training set. After each set of 100 speeches, new coders met with the coding team head to discuss inconsistencies and refine our coding instructions as needed to ensure clarity. At the end of the training process, all team members showed a high degree of inter-coder reliability (with Cohen's Kappa statistics between any pair of coders always exceeding .80 on the final training set). Additional details on the coding process, including full coding instructions provided to human coders, are provided in SI Appendix 1.

Excess Zeros in the Speech Counts

The dependent variables in our analyses in Tables 1 and 2 are the number of pro or anti-war speeches given by each member of Congress concerning a given war. SI Figures 1 and 2 illustrate the distributions of these speech counts. While there is significant variation in the volume of anti and pro-war rhetoric across members, both figures make clear that in each case a significant portion of members gave no floor speeches taking a clear position for or against the conflict in question. This ranged from a low of 36% members giving zero speeches critical of the Iraq War during the 110th Congress to a high of 79% of members giving zero speeches critical of the war in Afghanistan

[1] Code available at https://github.com/milesmcc/combine-cr/blob/master/annotate.py#L256

[2] Code available at https://github.com/milesmcc/combine-cr/blob/master/annotate.py

[3] For legislators who represented multiple states throughout their career in Congress, we only considered the state that they represented most recently to reduce the computational complexity (and space complexity) of the search algorithm.

during the 111th Congress. (However, the partisan splits in the percentage of members giving zero speeches were often significant, as expected – see SI Table 1).

<< SI Figures 1 and 2 About Here >>

The heterogeneity that produces over-dispersion can also produce excess zeros in the data (Cameron and Trivedi 2013), and hence a negative binomial model may be appropriate. However, if theory suggests that a separate process is generating zero and non-zero outcomes, then a zero-inflated model is more appropriate. In this case, we lack clear theoretical reasons to believe that there are factors that influence the decision of whether or not to give a floor speech taking a pro/anti war position that are separate from those that influence the number of speeches a member gives advancing that position. However, one could argue that partisan incentives may be most influential at the decision point of taking a position with even a single speech or not. For example, presidential co-partisans have partisan incentives not to break with a president of their own party and criticize his or her military policies that could tarnish the party brand name. Under this logic, party could primarily influence the decision to not issue any anti-war speeches, rather than reducing the number of anti-war speeches a member makes (though both are possible). There is at least some evidence broadly consistent with this in the Iraq War case. As shown in SI Table 1, almost three quarters of Republicans gave zero speeches criticizing the Iraq War, versus fewer than 5% of Democrats. Similarly, more than 90% of Democrats gave no speeches supporting the war, versus fewer than 15% of Republicans.

<< SI Table 1 About Here >>

As a robustness check, we estimated a series of zero-inflated negative binomial models. We model zero-inflation as a function of a member's partisan orientation to the president, and the count of speeches as a function of ideology and the other factors in the models from Tables 1 and 2 in the text. We then used a Vuong test with the corrections based on AIC and BIC proposed by Desmarais and Harden (2013). The results presented in SI Table 2 are substantively quite similar to those from the simpler negative binomial models. Most importantly, ideological hawks gave fewer anti-war speeches and more pro-war speeches in both wars. In Iraq, opposition party Democrats were much less likely than Republicans to give zero anti-war speeches and much more likely to give zero speeches supporting the war. By contrast, in Afghanistan more Republicans gave zero anti-war speeches than did Democrats, and fewer Republicans gave zero pro-war speeches than did Democrats. The results of Vuong tests with the AIC and BIC corrections were inconsistent and in many cases we cannot reject the simpler negative binomial model. As a result, the main analyses in the text employ negative binomial models.

<< SI Table 2 About Here >>

Logistic Instead of Count Models

In the text, we use count models to model the number of speeches each member gives either supporting or opposing the war. However, simply taking a position for or against the war– assuming it attracts enough media and political attention – may be more important than the number of speeches. As a robustness check, we re-estimate all of the analyses from tables 1 and 2 in the text, but with a binary dependent variable and logistic regressions. Results are presented in SI Tables 3 and 4.

<< SI Table 3 About Here >>
<< SI Table 4 About Here >>

The results are substantively similar to those from the count models discussed in the text. Democrats were more likely to give at least one speech critical of both the Iraq and Afghan Wars. Republicans were more likely to give one or more pro-war speeches in both wars under a Democratic and a Republican president. Similarly, ideology also drove intra-partisan heterogeneity. Moderate democrats were less likely to criticize both wars than were strong doves. They were also more likely to speak out in support of the war in Iraq than were dovish Democrats. Among Republicans, more hawkish members were more willing to speak out in favor of the Iraq War and less likely to criticize it. Ideology did not have a statistically significant effect on the likelihood of Republicans taking either a pro or an anti-war position with respect to Afghanistan.

Taking a Position vs. Remaining Silent

As shown in SI Figures 1 and 2, a significant share of members in both Congresses chose *not* to engage either war in their public floor rhetoric. To examine the factors that drive whether a member chooses to take a position on the war or to remain silent (rather than the valence of that speech), SI Table 5 presents a pair of models for each conflict. The first specification uses a logistic regression to model whether each member gives one or more speeches on the conflict or not. The second specification uses a count model to model the total number of relevant speeches taking a position for or against the conflict.

<< SI Table 5 About Here >>

The models show that Democrats were more likely to engage both wars publicly than were Republicans. Position within Congress also shaped public engagement as party leaders, foreign policy committee members, and more senior members were all more likely to engage the war publicly in their rhetoric.

Taking Both Pro and Anti-War Positions

Most Members in our data consistently took pro or anti-war positions in their floor rhetoric. However, about 10% of members gave at least one speech coded as pro-war and at least one coded as anti-war. To explore the factors that predict a member taking both pro and anti-war positions, we estimated a pair of logistic regressions reported in SI Table 6.

<< SI Table 6 About Here >>

Interestingly, opposition partisans were less likely to take conflicting positions on a conflict in both wars. In Iraq, Democrats were significantly less likely to do so, almost uniformly criticizing the war. By contrast, in Afghanistan Republicans were less likely to take conflicting positions, as most supported the war. Members of the party leadership, foreign policy committee members and more senior members were all more likely to advance both pro and anti-war positions publicly – perhaps reflecting the simple fact that these members spoke out about the war much more frequently.

Moderating Influence of Electoral Context on Ideology

In the manuscript we hypothesized that electoral context might moderate the influence of partisanship on members' wartime position-taking. Specifically, we hypothesized that representing a constituency that leaned toward the other party (i.e. a Democrat from a red district or a Republican from a blue district) will weaken the effect of member partisanship on the volume of anti and pro-war rhetoric (H5). However, electoral factors might also moderate the influence of ideology on war-time rhetoric. Accordingly, SI Table 3 re-estimates the partisan sub-group analyses from Table 1 but interacts the hawkish ideology variable with an indicator variable identifying cross-pressured members from constituencies that lean toward the other party. SI Figure 3 and 4 illustrates the substantive effects.

<< SI Table 7 About Here >>
<< SI Figure 3 About Here >>
<< SI Figure 4 About Here >>
<< SI Figure 5 About Here >>

In three of the eight model specifications, the coefficient on the interaction is statistically significant. For Democratic anti-war rhetoric during Iraq and Afghanistan, the coefficient is negative. Most electorally vulnerable members are significantly more moderate than their electorally safe co-partisans (e.g. SI Figure 5). SI Figure 3 shows that in both wars electorally vulnerable moderate members gave significantly fewer anti-war speeches than electorally safe moderate members. In both cases, as a vulnerable member becomes more dovish she gives an increasing number of anti-war speeches until the predicted volume of anti-war rhetoric becomes statistically indistinguishable from that of an electorally safe Democrat.[4]

The only other statistically significant result was for Republican rhetoric supporting the war in Afghanistan. In this model, the coefficient on the interaction is positive and statistically significant. SI Figure 4 shows that the most moderate vulnerable Republicans gave significantly fewer pro-war speeches than the electorally safe Republicans. However, as vulnerable members became more hawkish, their predicted number of pro-war speeches increased until it quickly became statistically indistinguishable from the prediction for electorally safe Republicans.

Thus, in all three cases the results suggest that electoral forces encouraged moderate members to modify their rhetoric in ways that would be more appealing to the baseline partisan orientation of their constituencies (i.e. less anti-war rhetoric for Democrats in red constituencies and less pro-war for Republicans in blue constituencies).

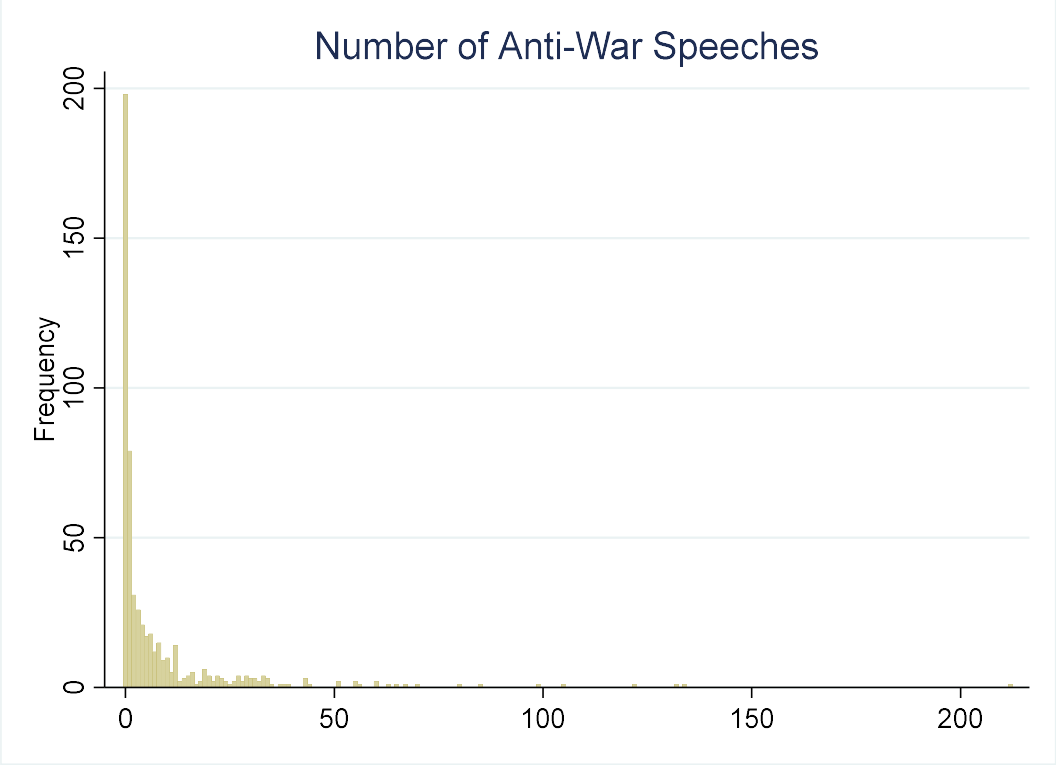
Ideological Distribution 111th Congress

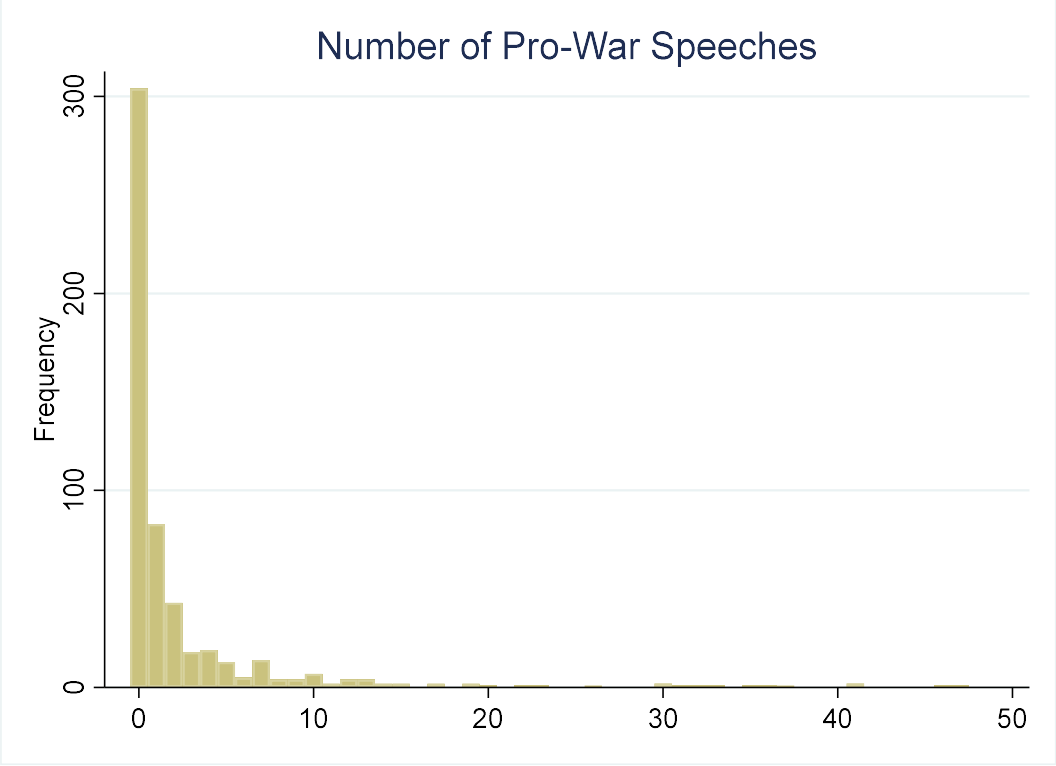
Figure 1 in the text illustrates the distribution of both party caucuses on the Jeong and Quirk foreign policy ideology measure in the 110th Congress. SI Figure 6 presents a similar graph for the 111th Congress.

<< SI Figure 6 About Here >>

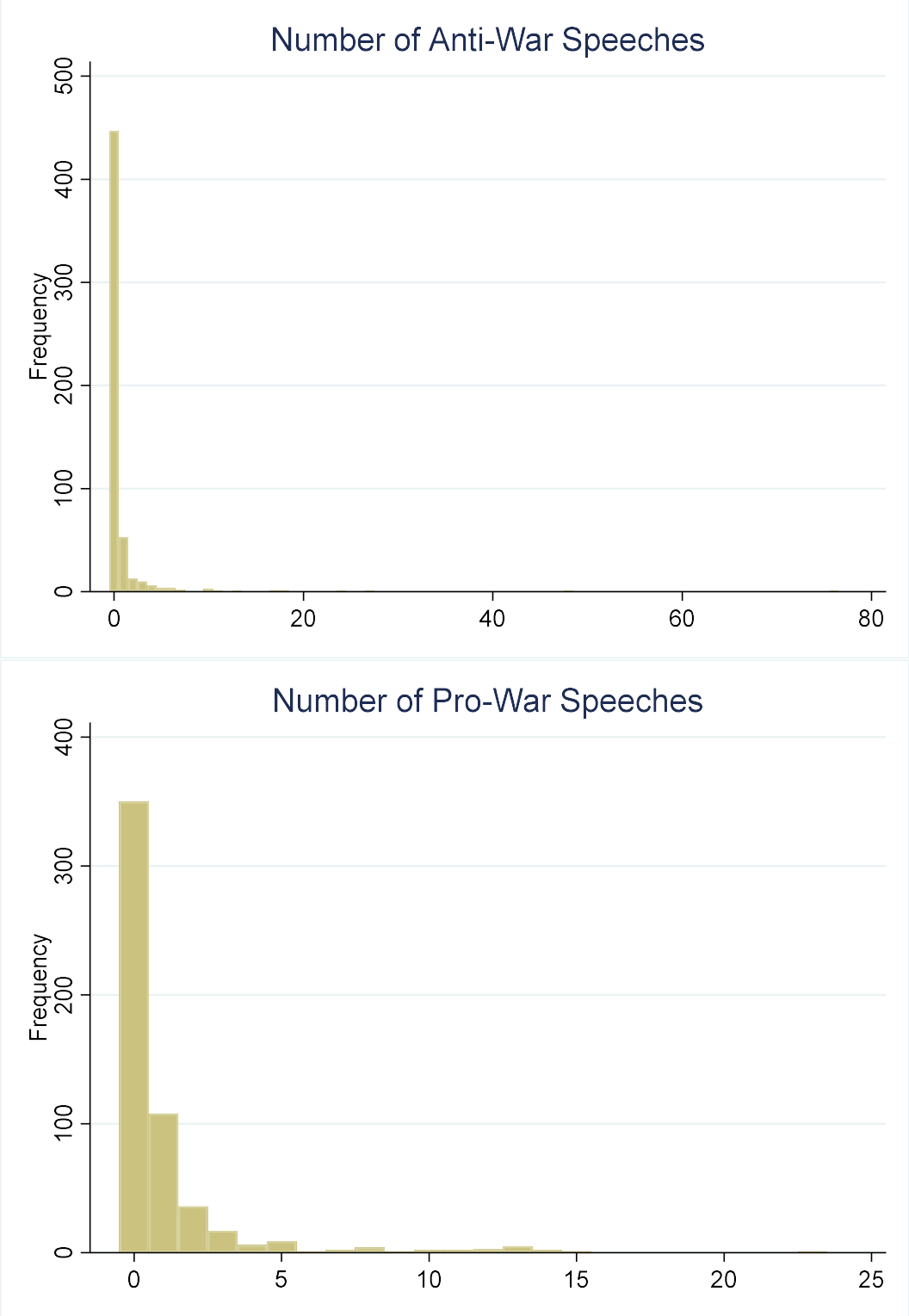
[4] As hawkishness decreases/dovishness increases, the confidence intervals increase dramatically – which is a result of there being few extreme doves from red districts and vice versa, (see SI Figure 5).

SI Figure 1: Distribution of Member Speech Counts For and Against Iraq War

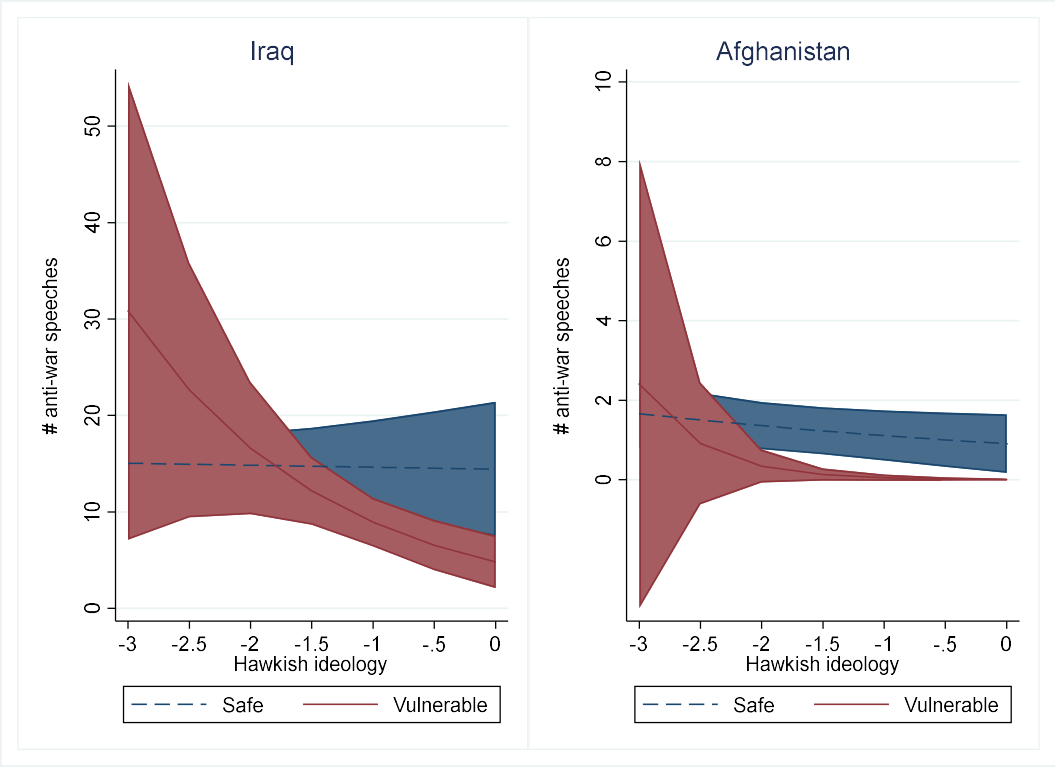




SI Figure 2: Distribution of Member Speech Counts For and Against Afghan War

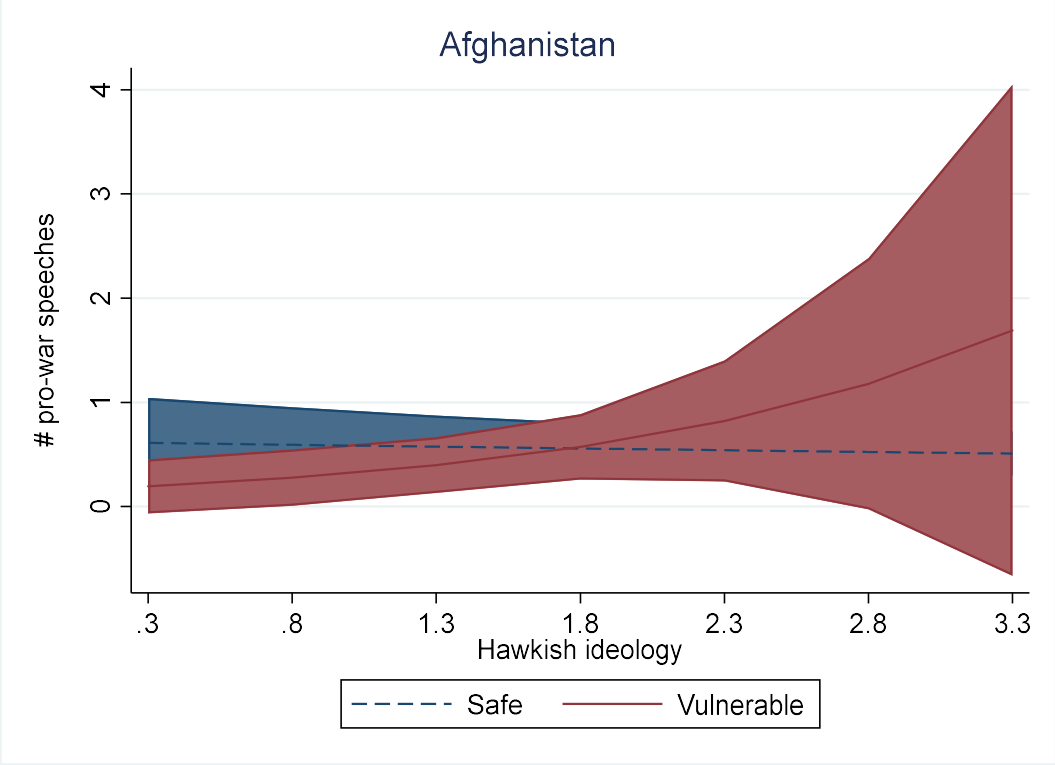


SI Figure 3: Ideology and Democratic Anti-War Rhetoric by Electoral Context



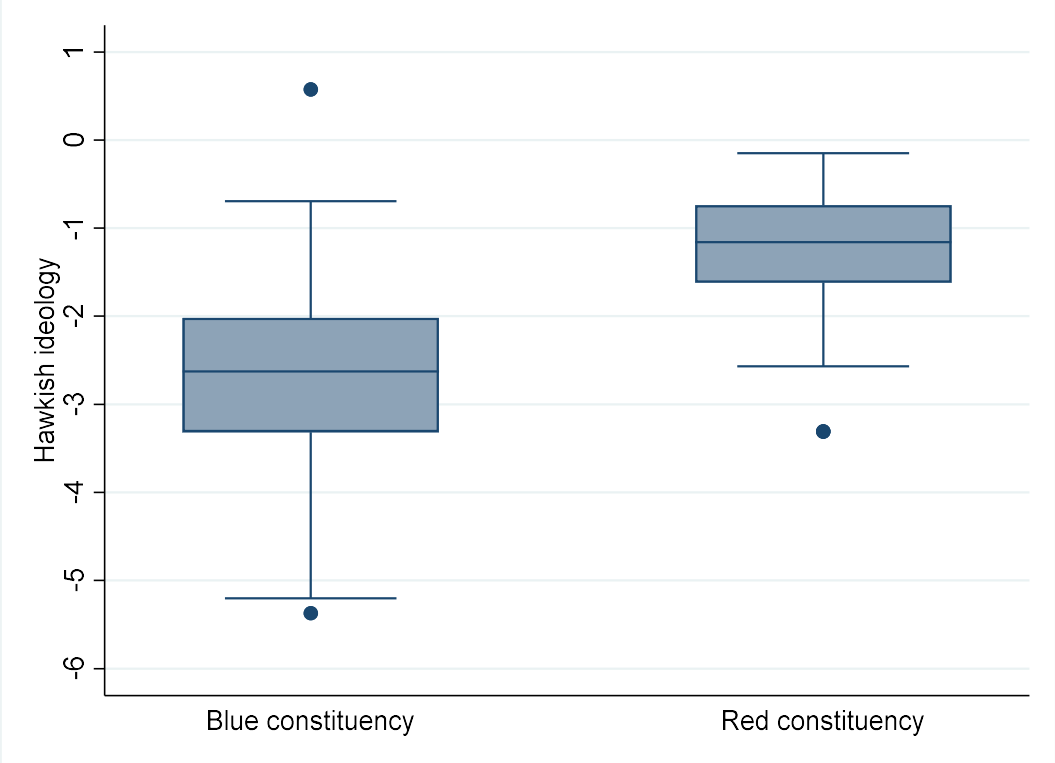
Note: X-axis truncated to ideological range of vulnerable members.

SI Figure 4: Ideology and Republican Afghanistan Pro-War Rhetoric by Electoral Context

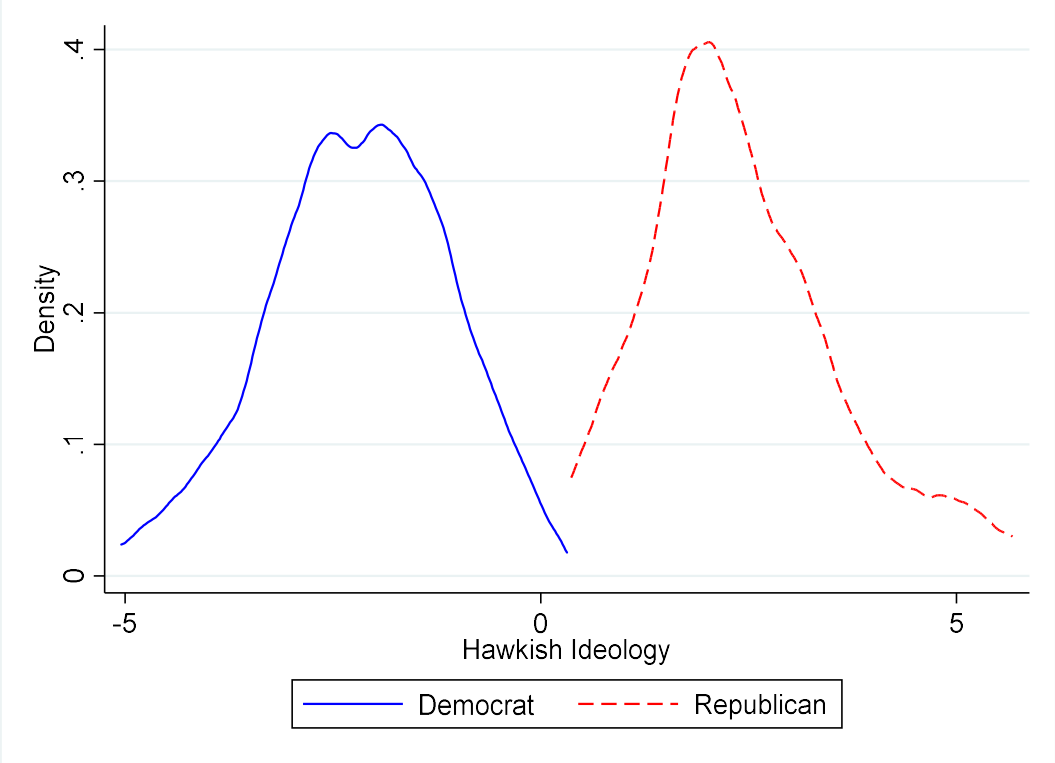


Note: X-axis truncated to ideological range of vulnerable members.

SI Figure 5: Ideology of Democratic Members by Electoral Context, 110th Congress



SI Figure 6: Distribution of Hawkish Ideology by Party, 111th Congress



Source: Foreign policy ideology scores described in Jeong (2018).

SI Table 1: Partisan Differences in Means

	Iraq		**Afghanistan**	
	Democrats	*Republicans*	*Democrats*	*Republicans*
Anti-war speeches	15.1	.7	1.2	.3
% with 0 anti-war speeches	3.1%	73.8%	72.6%	93.8%
Anti-war speeches (>=0)	15.6	2.6	4.7	4.5
Pro-war speeches	.2	5.3	.8	1.3
% with 0 pro-war speeches	91.8%	14.1%	67.7%	57.8%
Pro-war speeches (>=0)	.2	7.2	2.9	3.9

Note: Every difference in means between the parties is statistically significant ($p < .05$, two-tailed test) except for the difference in the average number of speeches criticizing the war in Afghanistan among those members who gave at least one anti-war speech and in the number of pro-Afghan War speeches among those Democrats who gave at least one speech.

SI Table 2: Zero-Inflated Negative Binomial Models

	Iraq		Afghanistan	
	Anti-War	Pro-War	Anti-War	Pro-War
Zero-Inflation Model				
Opposition party	-6.154***	6.875***	5.676***	-2.460***
	(0.288)	(0.256)	(0.427)	(0.478)
Count Model				
Hawkish ideology	-0.676***	0.714***	-0.284**	0.123**
	(0.073)	(0.078)	(0.128)	(0.059)
Leader	1.274***	1.273***	-1.172**	1.939***
	(0.365)	(0.254)	(0.475)	(0.319)
Foreign policy committee memberships	0.326***	0.513***	0.427	0.968***
	(0.109)	(0.104)	(0.281)	(0.150)
Seniority in chamber	0.013*	0.065***	0.048*	0.062***
	(0.007)	(0.011)	(0.027)	(0.012)
Military veteran	-0.159	0.342**	0.636	0.486**
	(0.172)	(0.160)	(0.449)	(0.211)
Female	-0.332*	-0.090	0.343	-0.101
	(0.192)	(0.215)	(0.433)	(0.239)
Latino	-0.534	1.230***	-2.676***	-0.164
	(0.392)	(0.395)	(0.669)	(0.517)
African American	-0.310	-0.014	-1.067*	-0.090
	(0.343)	(0.889)	(0.602)	(0.418)
Presidential party strength in district	0.012	-0.029**	0.018	0.002
	(0.012)	(0.013)	(0.018)	(0.011)
Electorally vulnerable	2.904***	0.510	-6.734**	-1.106
	(0.998)	(1.127)	(3.270)	(1.357)
Presidential strength * Electorally vulnerable	-0.052***	-0.010	0.134**	0.021
	(0.019)	(0.019)	(0.063)	(0.026)
Ln (alpha)	0.226***	-0.145	1.854***	0.695***
	(0.087)	(0.096)	(0.161)	(0.132)
Constant	0.467	0.689	-2.209**	-1.391**
	(0.680)	(0.752)	(0.894)	(0.576)
Observations	548	548	542	542

Zero-inflated negative binomial models with robust standard errors in parentheses. All significance tests are two-tailed.
*** p<0.01, ** p<0.05, * p<0.10

SI Table 3: Effect of Member Partisanship on Wartime Rhetoric (Binary not Count)

	Iraq		Afghanistan	
	Anti-war	Pro-war	Anti-war	Pro-war
Opposition party	4.67***	-4.43***	-1.72***	0.34*
	(0.43)	(0.33)	(0.31)	(0.20)
Leader	0.35	2.00***	0.05	1.89***
	(0.66)	(0.70)	(0.62)	(0.52)
Foreign policy committee memberships	0.52**	0.56**	0.10	1.11***
	(0.22)	(0.25)	(0.21)	(0.17)
Seniority in chamber	0.03	0.05**	0.06***	0.04***
	(0.02)	(0.02)	(0.02)	(0.01)
Military veteran	0.18	-0.08	-0.25	0.59**
	(0.32)	(0.34)	(0.31)	(0.24)
Female	0.15	-0.64	0.23	-0.07
	(0.42)	(0.41)	(0.30)	(0.28)
Latino	-0.27	-0.08	-0.88	-0.69
	(0.86)	(0.74)	(0.64)	(0.52)
African American	-0.47	-0.44	-0.03	-0.43
	(0.83)	(0.78)	(0.38)	(0.40)
Constant	-1.54***	1.35***	-1.45***	-1.60***
	(0.26)	(0.25)	(0.23)	(0.21)
Observations	548	548	550	550

Logistic regression models with robust standard errors in parentheses. All significance tests are two-tailed.
*** p<0.01, ** p<0.05, * p<0.10

SI Table 4: Effect of Ideology with Each Party Caucus on Wartime Rhetoric (Binary not Count)

	Iraq				Afghanistan			
	Democrats		Republicans		Democrats		Republicans	
	Anti	Pro	Anti	Pro	Anti	Pro	Anti	Pro
Hawkish ideology	-0.79*	0.51*	-0.97***	0.82***	-0.80***	0.08	-0.08	-0.02
	(0.40)	(0.27)	(0.20)	(0.23)	(0.15)	(0.14)	(0.28)	(0.14)
Leader	-	2.08**	0.78		0.12	1.28*		3.05***
		(0.82)	(0.74)		(0.69)	(0.68)		(1.08)
Foreign policy committee memberships	0.00	0.77**	0.53**	0.49	0.34	1.09***	0.08	1.08***
	(0.59)	(0.37)	(0.24)	(0.35)	(0.25)	(0.23)	(0.48)	(0.26)
Seniority in chamber	0.01	0.06**	-0.02	0.13**	0.04**	0.04**	0.07*	0.04
	(0.06)	(0.02)	(0.03)	(0.05)	(0.02)	(0.02)	(0.04)	(0.03)
Military veteran	0.51	-1.14*	0.13	0.45	-0.20	0.41	0.33	0.76**
	(1.13)	(0.69)	(0.36)	(0.48)	(0.38)	(0.34)	(0.63)	(0.34)
Female	-0.83	-1.86*	0.12	0.23	-0.29	0.16	0.84	-0.73
	(0.78)	(1.06)	(0.51)	(0.60)	(0.35)	(0.33)	(0.86)	(0.61)
Latino	-	-0.31			-1.54**	-0.92		0.66
		(1.10)			(0.68)	(0.62)		(1.05)
African American	-1.24	0.07			-0.78*	-0.38		
	(0.99)	(0.85)			(0.42)	(0.42)		
Constant	2.11***	-2.01***	0.80	-1.09	-3.04***	-1.44***	-3.22***	-1.28***
	(0.80)	(0.59)	(0.54)	(0.69)	(0.43)	(0.35)	(0.94)	(0.48)
Observations	260	292	252	241	319	319	209	223

Logistic regression models with robust standard errors in parentheses. All significance tests are two-tailed.
*** p<0.01, ** p<0.05, * p<0.10

SI Table 5: Taking a Position (Supporting or Opposed)

	Iraq		Afghanistan	
	Logit	Count	Logit	Count
Opposition party	1.10**	1.01***	-0.24	-0.39**
	(0.46)	(0.10)	(0.20)	(0.18)
Leader	-	1.28***	1.56***	1.16***
		(0.24)	(0.54)	(0.41)
Foreign policy committee memberships	0.34	0.37***	0.97***	0.70***
	(0.37)	(0.08)	(0.16)	(0.15)
Seniority in chamber	0.07	0.02***	0.05***	0.06***
	(0.05)	(0.01)	(0.02)	(0.01)
Military veteran	1.41*	0.06	0.35	0.29
	(0.76)	(0.12)	(0.23)	(0.21)
Female	0.01	0.04	0.07	0.19
	(0.53)	(0.13)	(0.26)	(0.24)
Latino	-	-0.39*	-0.85*	-0.85**
		(0.22)	(0.47)	(0.42)
African American	-0.30	-0.08	-0.22	-0.36
	(0.83)	(0.18)	(0.35)	(0.33)
Ln (alpha)		0.10		1.01***
		(0.06)		(0.09)
Constant	1.59***	1.28***	-0.87***	-0.17
	(0.37)	(0.10)	(0.19)	(0.16)
Observations	501	548	550	550

Logistic and negative binomial regression models with robust standard errors in parentheses. All significance tests are two-tailed.
*** p<0.01, ** p<0.05, * p<0.10

SI Table 6: Taking Both a Pro and Anti-War Position

	Iraq	Afghanistan
Opposition party	-0.97***	-1.32***
	(0.29)	(0.42)
Leader	1.15**	0.95
	(0.54)	(0.69)
Foreign policy committee memberships	0.74***	0.49*
	(0.20)	(0.27)
Seniority in chamber	0.04**	0.06***
	(0.02)	(0.02)
Military veteran	-0.30	0.22
	(0.32)	(0.40)
Female	-0.47	0.13
	(0.44)	(0.44)
Latino	-1.06	-1.07
	(1.04)	(1.05)
African American	-0.54	-0.49
	(0.77)	(0.64)
Constant	-1.98***	-2.83***
	(0.25)	(0.34)
Observations	548	550

Logistic regression models with robust standard errors in parentheses. All significance tests are two-tailed.
*** p<0.01, ** p<0.05, * p<0.10

SI Table 7: The Effect of Ideology by Electoral Context

	Iraq				Afghanistan			
	Democrats		Republicans		Democrats		Republicans	
	Anti	Pro	Anti	Pro	Anti	Pro	Anti	Pro
Hawkish ideology	-0.01	0.66**	-1.21***	0.64***	-0.20	0.18	-0.52	-0.06
	(0.09)	(0.29)	(0.19)	(0.08)	(0.16)	(0.14)	(0.36)	(0.13)
District leans other party	-1.10***	0.38	0.33	0.62	-4.85***	-0.56	-3.26	-1.39*
	(0.37)	(1.27)	(0.84)	(0.60)	(1.56)	(0.62)	(2.68)	(0.84)
Ideology X District leans other party	-0.61***	0.48	0.01	-0.21	-1.74**	-0.19	0.62	0.78*
	(0.22)	(0.91)	(0.89)	(0.58)	(0.84)	(0.43)	(1.44)	(0.44)
Leader	1.24***	1.83**	1.63***	1.25***	-1.27	2.36***	-15.28	1.69***
	(0.35)	(0.93)	(0.51)	(0.31)	(0.92)	(0.51)	(1,315.40)	(0.49)
FP committee memberships	0.25**	0.80*	0.36*	0.54***	0.34	1.17***	0.18	0.61***
	(0.11)	(0.45)	(0.20)	(0.12)	(0.29)	(0.19)	(0.75)	(0.20)
Seniority in chamber	0.02*	0.08***	-0.00	0.07***	0.05*	0.05***	0.15	0.07***
	(0.01)	(0.03)	(0.02)	(0.01)	(0.03)	(0.01)	(0.11)	(0.02)
Military veteran	-0.32*	-1.50*	0.58*	0.39**	-0.82*	0.19	1.21	0.96***
	(0.18)	(0.81)	(0.30)	(0.16)	(0.47)	(0.29)	(0.85)	(0.26)
Female	-0.08	-2.30**	-0.14	0.07	0.34	-0.07	1.47	-0.68
	(0.17)	(1.15)	(0.47)	(0.23)	(0.43)	(0.31)	(1.56)	(0.51)
Latino	-0.52**	0.91	-18.90	1.33**	-2.43***	-1.70**	-14.48	1.77**
	(0.25)	(0.84)	(7,132.78)	(0.53)	(0.82)	(0.67)	(2,120.15)	(0.79)
African American	-0.17	0.33			-0.78	-0.17		
	(0.20)	(0.86)			(0.48)	(0.38)		
Ln (alpha)	0.10	1.50***	0.24	-0.13	1.66***	0.56***	2.74***	0.57***
	(0.08)	(0.45)	(0.29)	(0.11)	(0.15)	(0.20)	(0.42)	(0.19)
Constant	2.55***	-1.60*	1.10**	-1.00***	-0.47	-1.08***	-2.16	-0.92**
	(0.25)	(0.82)	(0.47)	(0.27)	(0.47)	(0.38)	(1.52)	(0.45)
Observations	292	292	256	256	319	319	223	223

All models are negative binomial regressions. Standard errors in parentheses. All significance tests are two-tailed.
*** p<0.01, ** p<0.05, * p<0.10

SI Appendix 1. Instructions for Hand Coding Congressional Statements

Coding congressional speeches was a multi-step process. The overarching coding task was to identify whether a speech is relevant or irrelevant. Then, for relevant speeches the coder must determine whether the speech is primarily pro-war or anti-war. The process of hand coding ultimately operated in the service of coding a training set for the machine learning, an iterative process of human-machine-human-machine to finesse the properties that would provide the most accurate training set for the machine learning algorithms.

Stage 1:

A team of coders first coded a training set of 500 speeches. This training set was then used to generate a model to predict whether or not a speech is relevant.

Stage 2:

This model was then used to predict relevance (both a binary decision – relevant or not – as well as a predicted probability of relevance) for a new set of 100 speeches that were not part of the original training set. This new set of 100 speeches was also coded by a team member.

The ML relevance model and the human coder agreed on 81 of the 100 cases for a Cohen's kappa of .6. A deeper look showed that most of our disagreements occurred on speeches where the model's predicted probability of relevance hovered near .50. The most common deviation was the model coded a speech relevant that the human coder coded as irrelevant. Yet, in these speeches the average predicted probability of relevance from the model was just under .60 (n=15) vs. .79 in the (n=54) cases where the model and the human coder both coded the speech as relevant. "False positives" were much more common than "false negatives."

Examining only speeches where the model predicted a speech to be irrelevant (probability of relevance < .45) or relevant (probability of relevance > .60) (n=79), the model and the human coder agreed in 91% of the cases for a Cohen's kappa of .81.

Stage 3:

At the end of 2019, we opted for the following strategy. If the relevance model coded a speech as irrelevant with a predicted probability of relevance of < .45, we coded the speech as irrelevant (n=2,216). If the relevance model coded a speech as relevant with a predicted probability of relevance of > .60, we coded the speech as relevant (n=6,288). If the relevance model was indeterminate and returned a predicted probability of relevance of >= .45 & <= .60 (n=1,749), we had human coders code each speech for both relevancy and tone.

Stage 4:

Between the initial training set of 500 speeches and the additional set of 1,749 "indeterminate" speeches that were hand-coded in stage 3 described above, we had a new training set of 716 speeches that were identified by human coders as relevant and then coded for tone as either pro-war or anti-war.

The ML model raised questions of false positives and negatives. A human coder coded 195 speeches that the ML model coded as relevant (predicted probability > .60). In the first pass, he coded 90 of these (as irrelevant). This group of speeches seems to have been particularly tricky with a large number of speeches on the negotiations for a new Status of Forces Agreement (SOFA) and for a bill to allow the families of killed and wounded soldiers to sue the Iraqi government. The language made these speeches seem relevant, even though they were not.

We then asked the human coder to take a second look at these speeches as there is always some ambiguity and to give the relevance code the benefit of the doubt and give a pro-war or anti-war coded if reasonably consistent. This reduced the number of irrelevant speeches to 34.

These 195 speeches broke out this way:

Correct codes:

- 111 speeches were coded anti-war by both the human coder and ML model.
- 14 speeches were coded pro-war by both the human coder and ML model.

Incorrect codes:

- 33 speeches were coded pro-war by the human coder but anti-war by the ML model
- 28 of these were by Republicans and would presumably be caught if we hand-coded all "contra-type" speeches
- 3 speeches were coded anti-war by the human coder but pro-war by the ML model
- 2 of these were by Democrats and would presumably be caught if we hand-coded all "contra-type" speeches

Of the 34 speeches the human coder coded as irrelevant, the model coded 31 as anti-war and 3 as pro-war

  - 18 of these were coded as anti-war speeches by Democrats
  - 3 as pro-war speeches by Republicans
  - 13 were coded as anti-war speeches by Republicans – and they would be hand-coded and caught (presumably) if we hand-coded all speeches the ML model coded as contra-type

Based on this analysis, we pursued an Iterative Human and Machine Learning Coding

- Treat all predicted probability of relevance < .45 as irrelevant
- Treat all predicted probability of relevance > .60 as relevant
- Human coding of all speeches probability >=.45 & <=.60
- ML model for tone of all speeches with relevance predicted probability of > .60
- Hand coding of all speeches coded by ML model as "contra-type"
- Republican speeches critical of war (n=1,286)
- Democratic speeches supportive of war (n=148)

Classifying Relevance

Speeches directly engaging the Iraq War and offering a substantive argument about the decision to go to war or its conduct should be coded as relevant for our analysis. In some cases, the arguments that the war was right/wrong or that the war should be continued or drawn down may not be explicit. However, if the speech clearly implies that the war was right/wrong, good/bad, or costly etc., then we consider the speech as relevant.

Some speeches are clearly on a separate topic and mention Iraq only in passing. If a speech references the war only indirectly, perhaps in a single or two sentences, the speech is coded as irrelevant *unless the reference to the war clearly argues that the war was right or wrong or that American troops should stay or be withdrawn*.

Examples of Relevant and Irrelevant Statements

- **Relevant —** Speeches that raise concerns about the sustainability, cost, strategy, or consequences of the war.
    - A speech by Kucinich focusing primarily on what he perceives as a rush to war with Iran that also briefly mentions "the falsehoods that set us on the path to war against Iraq." This speech is coded as relevant because Kucinich makes an argument about the war: he argues that it was a mistake because it was started under false pretenses.
    - A related example is a speech about the Wall Street bailout. It compares the bailout to the surge and explicitly calls the surge unsustainable. This is coded as relevant and negative (tone).
    - A speech that raises the concerns about war causing more casualties or higher costs of treating wounded soldiers. For example: "Mr. President, today, as Chairman of the Senate Committee on Veterans' Affairs, I introduce the Veterans' Compensation Cost-of- Living Adjustment Act of 2010. [...] It is important that we view veterans' compensation, including the COLA, and indeed all benefits earned by veterans, as a continuing cost of war. It is clear that the ongoing conflicts in Iraq and Afghanistan will continue to result in injuries and disabilities that will yield an increase in claims for compensation." (3/11/2010, Akaka).
    - "I can state emphatically that if we continue our present strategy in Afghanistan, we will not succeed…Let the Afghans pay the price. Let them do their fighting. Putting American boys in their place is contrary to our national interests, and will not lead to success…we need to change strategy instead of putting our people into a meat grinder in the place of Afghans themselves." (Rohrabacher).
- **Irrelevant —** Speeches that speak to procedural or factual aspects of the war rather than whether or not to continue with the war.
    - Senator Cornyn gave a speech criticizing the procedures under which a war funding bill will be debated without ever offering an argument about the war itself: "Mr. President… We need to have a fair debate and fair opportunity for a vote on these competing proposals, both of which I say, again, were borne out of the best of intentions, and that is providing educational benefits for our military servicemembers and their families… I agree with the Senator from Arizona that this procedure, whereby we are asked to vote on what started out to be an emergency funding bill to support our troops in harm's way in Afghanistan and IRAQ, has now been larded up with a bunch of pet projects and other spending which have nothing to do with supporting our troops in harm's way. Congress, by engaging in this sort of conduct, is actually slowing down delivery of the money to the troops who need it."

- A speech by Velasquez mentions that "as the wars in Iraq and Afghanistan continue, the number of returning veterans will only increase" is coded as irrelevant. The speech is irrelevant because it does not explicitly say the war was right or wrong. If it had said more and more veterans will return home with injuries or PTSD or something emphasizing the costs of war more explicitly, we would have coded it as relevant.
- A speech that simply inserts into the record an article or a government report or another document supportive or critical of the war is irrelevant *unless* the member her/himself makes an explicit argument about the war as well.
- Speeches that are about appropriations for the war in a procedural sense but do not debate the merits of the US involvement in the war are coded as irrelevant.
    - However, speeches that focus on appropriations, but that do make an explicit argument about the war are coded as relevant. For example: "Mr. Chairman, I would like to begin by congratulating Ranking Member McKeon and Chairman Skelton for their fine work on the National Defense Authorization bill for 2011. Mr. Chairman, the defense authorization bill provides our Department of Defense the resources it needs and addresses the committee's priorities in supporting our men and women in uniform, their spouses and families. To enable our servicemembers to continue defending our freedoms abroad, we owe it to them to provide the best available support, training and equipment; and this bill reflects our undying commitment to those servicemembers. After traveling to Afghanistan and Pakistan last month on a congressional delegation and visiting the troops in the field, I know it is critical that we move the bill forward quickly to provide them that vital support. *The funding and support in this bill for the wars in Afghanistan and Iraq are critical. That support back home is just as critical.*" The italicized sentences are clearly supportive of the war, so the speech is coded as relevant (and pro-war for general sentiment, see below).

Coding Rules for Difficult Cases

Below we discuss coding rules for three common categories of difficult cases: speeches honoring fallen troops; speeches mentioning veterans health issues; and speeches discussing the plight of Iraqi refugees.

- Speeches honoring fallen troops are coded as irrelevant *unless they contain significant arguments either in support or in opposition of the war effort*.
    - For example, in Senator Woolsey's speech on 11 March 2010, she said, "Their mission in Afghanistan was to clear the routes of improvised explosive devices, IEDs, to allow the infantry freedom of movement. They were the front line for the front line! These brave soldiers risked their lives every day for their comrades and returned as the most decorated unit." Because this speech does not make a significant argument about the war (for example, that the human costs of war have been very high), it is coded as *irrelevant*.
    - However, a speech by Senator Pryor honoring a fallen soldier gave specific pro-war arguments, saying that they fought for democracy and to bring peace to Iraq and that he sought to "safeguard" the future of his family and country: "Mr. President, my thoughts and prayers are with the family and friends of SSG Chad Caldwell who left

this world *fighting for democracy and peace for the Iraqi people*. By all accounts, he loved his family and country and *served three combat tours to safeguard their Future*. After graduating from Cheney High School in 2001, Staff Sergeant Caldwell joined the Army. The decorated soldier served one tour in IRAQ, followed by a second combat tour in Afghanistan. In February 2007, he signed up for a third tour in IRAQ. During this time, he earned two Army Commendation Medals, including one for saving the life of a pregnant woman after the U.N. headquarters in Baghdad was bombed in 2003. The second medal was awarded to Staff Sergeant Caldwell for saving the life of his lieutenant colonel that was caught in gunfire. I join Arkansans and Washingtonians in lifting his wife Raechel and two young sons, Trevor and Coen, in my prayers. We will never forget the sacrifice made by the Caldwell family." Because of these specific arguments, the speech was coded as *relevant* and *pro-war*.

  - Similarly, a speech by Senator Boxer honoring fallen Californians concluded by explicitly criticizing the war in Iraq and the lack of a viable exit strategy: "Every single one of these brave Americans died doing something they wanted to do for their country. Their Commander in Chief sent them into battle, so of course not one of them has died in vain. *But I want to do all I can--and I say this from my heart--to ensure that when we get into a conflict, we know there is a way out and that we can bring these conflicts to an end as soon as possible* because so many sacrifices are being made, and no more so than the loss of America's finest." Because of this specific argument against the war, the speech is coded as relevant and anti-war.

- Speeches that address veterans' health issues are also irrelevant *unless they have a clear tone either as being a critique of the war (e.g., high costs) or in support of it*.
  - For example, in a debate over the Military Construction, Veterans Affairs and Related Agencies Appropriations Act, 2010, Senator Hutchison said she favored more funding for traumatic brain injuries from veterans. The statement is coded as *irrelevant* because it does not make specific reference to the ongoing wars as a cause, nor does she weigh in on whether those consequences weigh on whether she continues to support the war: "The policies of this conflict have been passionately debated on the Senate floor in recent days. But I am sure we can all agree that--independent of our views of the war--we must provide the infrastructure needs of our sailors, soldiers, airmen and marines. This bill does that."
  - By contrast, a speech by Peter Stark is *relevant* because it is explicit about the high human costs of the war: "Mr. Speaker, the service men and women serving overseas have born the brunt of the cost of the wars in Iraq and Afghanistan. The Caregivers and Veterans Omnibus Health Services Act ensures that when they return, they will obtain the quality treatment and health care they deserve. This legislation addresses many of our veterans' most urgent needs. Record numbers of service men and women returning home are suffering from posttraumatic stress, and this bill ensures that mental health services are more accessible. The bill ensures that women don't get second-class health care by expanding coverage for women's health, including care for newborns. The bill also eliminates health care copayments for veterans who are catastrophically disabled. Many politicians use the slogan ``support the troops'' when they mean ``support this war.'' This bill actually supports our troops--by providing them the care and support services they need when they return home. I urge my colleagues to support this bill."
  - This speech from Ben Nelson is also coded as *relevant* because it, too, makes explicit arguments about the high human costs of the war: "Mr. President, I rise today to

honor the Courage and selflessness of the men and women serving so bravely in America's military and, in particular, to acknowledge those from my home State of Nebraska… The United States is engaged in a protracted war for the first time since the end of the military draft 35 years ago. The strains of this prolonged engagement in IRAQ and Afghanistan are underscored by the burdens placed on our service members and their families. The voluntary nature of our military accentuates these burdens, being borne by a relative few. This present situation is unique compared to America's past military engagements. World Wars I and II and the conflicts in Korea and Vietnam relied on conscription; consequently, the effects of these wars were felt by a broad number of ordinary Americans. Today, the current wars in IRAQ and Afghanistan have placed our soldiers and military families in an extraordinary situation… We must never forget these brave men and women, who have valiantly and selflessly served their country, together with their families, who provide them with immeasurable support. Their honor in service must remain a source of inspiration for us all." If Nelson had simply said we must honor the service of our veterans and military communities, it would be coded as irrelevant. However, because the speech explicitly discusses the high human costs of the war, it is coded as relevant.

- Speeches that address the plight of Iraqi refugees are coded as *irrelevant* unless they make an explicit argument that the war caused the refugee crisis and that the war was wrong.
    - This speech by Congressman Berman vividly recounts the plight of refugees -- but it falls short of blaming the war for the situation and arguing it was therefore wrong. As a result, the speech is coded as *irrelevant*. Mr. BERMAN. "Since our invasion, well over 4 million Iraqis have fled their homes as a result of political instability, economic catastrophe, and ethnic and sectarian strife. Unable to legally find employment in their host countries, living in substandard housing with inadequate medical and educational facilities, many refugees simply have no place to turn. While neighboring countries have struggled to cope with the strain of hosting millions of these refugees, our track record on refugee resettlement has been nothing short of an embarrassment. As the refugee crisis unfolded in Iraq and its neighboring countries in the aftermath of our invasion, the Departments of State and Homeland Security stood by while a backlog of refugees referred by the United Nations for resettlement languished in the slums of Amman and other cities in the region. This legislation will help make up for the administration's inexcusably lethargic pace by setting out clear refugee processing priorities, mandating the centralization of Iraq refugee efforts in the State Department, requiring greater cooperation with those allies in the region who are hosting many of these refugees, and increasing congressional oversight of refugee assistance and resettlement programs."

Classifying General Sentiment

To determine the general sentiment of each relevant statement (statements that are coded as irrelevant are, by definition, neither pro or anti war), we classify each as broadly either pro-war or anti-war. In the spreadsheet, such classifications should be listed in the 'general sentiment' column as PRO or ANTI, respectively.

- Example of a *pro-war* statement: "I voted for these funds because I chose to give President Obama time to implement his Afghanistan strategy and withdraw troops from Iraq. But it was not an easy decision." (6/16/09, DeFazio).
- Example of an *anti-war* statement: "So what's to blame? It's our strategy. It's a strategy which has relied almost exclusively on military action for over 8 years while ignoring the critically important political, economic, and cultural aspects of the conflict. Yet President Obama is now being urged to double down on the military-only policy that has failed us and send in another 40,000 troops. If we go down that road, what can the American people expect? They can expect higher troop levels, higher casualty rates, and many years of war that can end up costing us over a trillion dollars. Even if we do all that, the odds will still be stacked against us. That's not a strategy for success, Mr. Speaker. I think we can do better." (9/2/09, Woolsey).
    - The Stark and Nelson speeches above are both also coded as anti-war because they emphasize the high human costs of the conflict.
    - Similarly, the following speech by Senator Menendez is also coded as relevant and anti-war: "The fact is, as I mentioned earlier in my comments, we have used the National Guard in an unprecedented way. They have been called for deployment abroad, both in Iraq and Afghanistan, and elsewhere in unprecedented numbers. The stress we have created on the force by virtue of these two continuing engagements, as well as any other national emergency that might occur, is incredibly challenging." The speech explicitly calls the heavy reliance on the National Guard "unprecedented" and talks about the "stress" placed on the Guard and the challenges it creates.
- A speech that acknowledges the war's costs (human, financial, or both), but that argues the war is necessary and worth it would be coded as pro-war.

Afghanistan: Pro or Anti-Administration

One of the main potential advantages of looking at speeches is that they allow members to take more nuanced positions than roll calls which are inherently binary. Perhaps most importantly, members can take different positions on whether they support a war more generally and whether they support the current administration's conduct of it.

For example, consider this speech by Ileana Ros-Lehtinen (R-FL): "Although some progress has been achieved, much remains to be done… Suddenly, however, President Obama has apparently decided to rethink the entire strategy in Afghanistan after his hand-picked new commander there, General Stanley McChrystal, warned that the war could be lost if he doesn't get more troops in the next 12 months. The stunning magnitude of this reversal was highlighted in an article, an op-ed in The Wall Street Journal of September 22. The author Leslie Gelb, a former Pulitzer Prize-winning reporter, columnist and president emeritus of the Council on Foreign Relations, wrote: ``I'm lost on President Barack Obama's Afghanistan policy, along with most of Congress and the U.S. military."… Mr. Speaker, if the U.S. is going to prevail against al Qaeda and the Taliban and win in Afghanistan, the administration must take immediate steps to fully implement the strategy without any further vacillating or delays." Ros-Lehtinen's speech is generally supportive of the war itself, but critical of the Obama administration's conduct of it (specifically, its delay in responding to McChrystal's request for more troops).

To capture this potential nuance, our team of human coders re-coded each speech initially coded as relevant and pro or anti-war for whether the speech also took a clear position on the administration and its conduct of the war. Ros-Lehtinen's speech above was thus coded pro-war, but anti-administration.

Not all speeches that took a clear position on the war also took a clear position on the administration. For example, consider this speech by John Duncan (R-TN): "Mr. Speaker, we have now spent approximately $200 billion, $200 billion, on the war in Afghanistan… all this in a place where even General Petraeus said we should remember has been known as the "graveyard of empires." This comes on top of approximately $800 billion on the war in Iraq and hundreds of billions more in indirect costs for these two wars. Then, in the supplemental bill that we'll take up later today, we have $5 billion for the International Monetary Fund, and in this bill, there is a guarantee for $100 billion in loans made by the IMF, loans being made to other countries. All this money will have to be borrowed because we are so many trillions in debt already that it is not even humanly comprehensible." This speech is critical of the war overall and its steep financial costs, but it does not take an explicit position one way or the other on the Obama administration itself and its conduct of the war.

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