Using computational text analyses to understand the role of cultural categories in constitutional-drafting processes

Keywords: computational text analysis, text networks, law, Chile, cultural bridges

Extended Abstract

A growing body of research in cognitive sciences, psychology, and cognitive sociology has discussed how cultural categories intervene in processes of lawmaking or policymaking (Hoff & Walsh, 2019; Nelken, 2020; Shiff, 2020; Steensland, 2017). Shared cultural models that we employ to make sense of the world shape the social construction of institutions (Chase, 2007). Therefore, in periods of institutional upheaval, culture plays a pivotal role. This relationship has been mostly qualitatively examined through the study of policy and lawmaking debates, with a focus on the state officials that directly engage in the debate or implementation of policies and laws (Shiff, 2020; Steensland, 2017). This study leverages novel computational methods to examine how cultural categories embodied in norms resonate with citizens, bearing their support.

Using text data from the online participatory components of the Chilean constitutional-drafting process, we gauge whether norms that operated as cultural bridges were more likely to yield public endorsements. Chile faced an unprecedented wave of protests in 2019 (Somma et al., 2020), and political parties resolved to hold a referendum to decide whether to draft a new political constitution which was rejected by the population by the same mechanism one year later, leaving the constitutional debate open at the moment of writing this article. One of the innovations of the first draft writing was its participatory mechanisms. Citizens and civic organizations proposed constitutional norms which citizens could sponsor. The convention of democratically elected representatives should discuss each norm surpassing the threshold of 15,000 endorsements. The text of these norms proposals and the received citizens' endorsements enable us to test whether norms with overlapping cultural categories—i.e., cultural bridges (Bail, 2016)— were more likely to be supported by the public.

A corpus of 2,456 norms was generated. 980,332 people supported up to five norms with a total of 2,809,752 endorsements. Following standard procedures in text analysis, the text was reduced to lemmatized nouns as carriers of meaning. The analyses were twofold. First, we conducted a text network analysis to build an indicator of cultural betweenness—namely, the average correlation between bipartite affiliation networks. Nouns within a norm shared an edge, and because every noun could be used in more than one norm, they were considered bipartite affiliation networks. Thus, norms with a higher overlap of nouns operate as cultural bridges. The average Pearson's correlation with each other norms was used as our key measurement of cultural betweenness. Citizens' support for specific norms was measured by the number of sponsorships received. Every norm proposal was available on an online website for up to eight weeks, and the convention was divided into seven commissions. Thus, the specific week each norm proposal was uploaded to the system, and which commission was assigned to further debate it were also considered additional covariates and used as control variables. Descriptive statistics are reported in Table 1. The second part of the analysis is aimed at testing our central hypothesis of the effect of cultural categories embodied in norms and public support. We used several statistical models to account for the distribution and errors variance of the number of sponsorships as dependent variable. As a starting point and to facilitate the substantive interpretation, we estimated an OLS model with (Model 1) and without control variables (Model 2). Since only 78 norms passed the threshold of 15,000, the dependent variable is left-skewed, and errors are no asymptotically distributed. Therefore, we estimated Poisson (Model 3) and negative binomial regressions (Model 4) with controls.

Our results are consistent across models. The higher the cultural betweenness of a specific norm, the higher the number of citizens' endorsements. The negative binomial regression suggests that one standard deviation increase in the norms' cultural betweenness is associated with 0.494 times more endorsements. Regarding the magnitude of the effect, we estimate a model with standardized coefficients reported in Figure 2. The effect of cultural betweenness is comparable to the effect of one additional week of the norm being available online. Therefore, the effect is not neglectable. Finally, several sensitivity analyses support the robustness of our findings.

Three implications can be drawn from this study. First, we have leverage on computational text analyses to examine cultural categories embedded in constitutional norms and their consequences as explanatory factors. This empirical strategy illustrates how we can measure specific cultural views embedded in a legal corpus. Interpretive approaches in legal culture studies acknowledge the challenges of making predictions on how the law is embedded in the social texture (Kurkchiyan, 2012; Nelken, 2020). Our study highlights a consistent path towards that goal. Second, this is the first study to quantify and test a theoretical prediction previously suggested by qualitative studies. Previous studies' in-depth examination of policy and law debates has suggested that cultural categories or the mental models behind culture are a stepping stone in institutional development processes (e.g., Meanwell & Swando, 2013; Ostrom, 2005; Shiff, 2020; Steensland, 2007). Our evidence confirms this theory for the case of the Chilean constitutional drafting, which shows cultural views embedded in law proposals are relevant in the process of institutional change. Finally, our findings have important policy implications. Policy scholars (Hoff & Walsh, 2019) argue that the law can change cultural categories and the context that activates them. However, in bottom-up and highly participative processes, those laws have also to be supported by the public. Demonstrating that laws can operate as cultural bridges that elicit citizens' support.

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Table 1. Descriptive Statistics

Variable	N	Mean	Std. Dev.	Min	Max
Sponsorships	2496	1125.702	4008.463	2	60852
Cultural betweenness	2496	0.098	0.022	0.021	0.156
Week 01	2496	0.038	0.191	0	1
Week 02	2496	0.04	0.196	0	1
Week 03	2496	0.048	0.215	0	1
Week 04	2496	0.071	0.257	0	1
Week 05	2496	0.15	0.357	0	1
Week 06	2496	0.3	0.458	0	1
Week 07	2496	0.327	0.469	0	1
Week 08	2496	0.025	0.157	0	1
Commission 1	2496	0.181	0.385	0	1
Commission 2	2496	0.077	0.266	0	1
Commission 3	2496	0.109	0.312	0	1
Commission 4	2496	0.4	0.49	0	1
Commission 5	2496	0.12	0.325	0	1
Commission 6	2496	0.058	0.235	0	1
Commission 7	2496	0.055	0.229	0	1

Table 2. Regression Models.

	Model 1 B	Model 2 B	Model 3 B	Model 4 B
Cultural betweenness	700.7***	661.3***	0.756***	0.491***
	(88.77)	(84.65)	(0.000)	(0.030)
Constant	1125.7***	524.15.0***	5.829***	5.998***
	(79.03)	(105.45)	(0.002)	(0.070)
Controls	NO	YES	YES	YES
Observations	2496	2496	2496	2496
Adjusted R-squared	0.03017	0.07721		

Note: Robust standard errors in parentheses. Controls include dummies for the commission the norm was submitted (1 to 7) and which in which the norm was submitted (1 to 8).

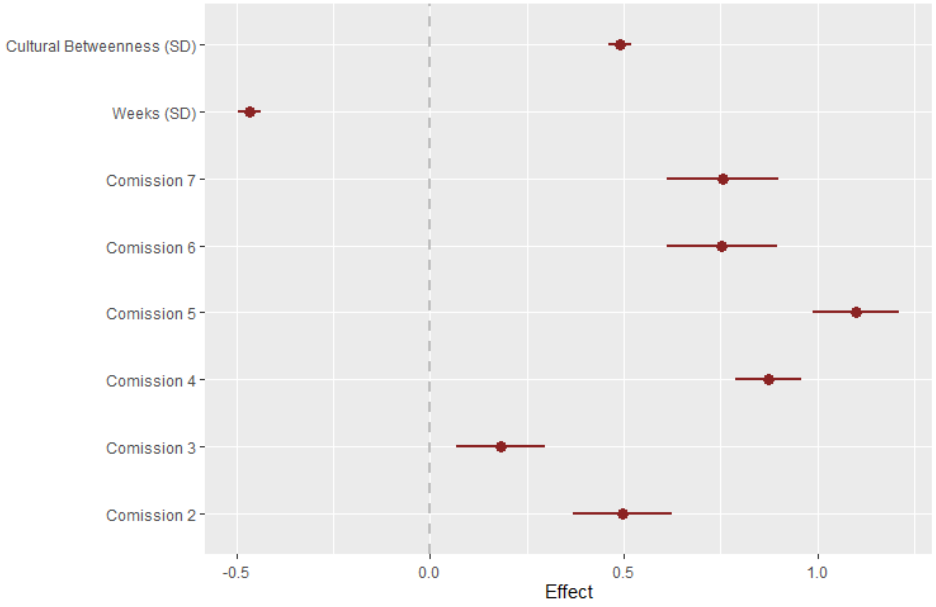

Figure 1. Coefficients from the Binomial Negative Regression.