A Grammar of Institutions for Complex Legal Topics: Resolving Statutory Multiplicity and Scaling-up to Jurisdiction-Level Legal Institutions

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Abstract

Laws are a unique type of primary data: they structure our everyday interactions and are publicly available to all people. How can we assess the law's effect when multiple overlapping and cross-referencing statutes constrain and incentivize behavior simultaneously? I present a principled method for aggregating the legal rules coded in multiple laws into a single legal institution to help us understand and better characterize complex, interconnected, and sometimes contradictory bundles of legal rules. The method utilizes Institutional Grammar (IG), which scholars have used to code legal language into comparable institutional statements. The method is amenable to any legal topic and is especially appropriate when multiple statutes simultaneously comprise the legal institution in a single jurisdiction. To illustrate, I draw on the laws regulating civil society organizations (CS0s), which offer a valuable and substantively important prism to study legal texts as the cause of social phenomena or the outcome of a political process. I discuss my proposed method in three parts: first, why using IG enhances a coding instrument's validity; second, how an IG-based instrument allows researchers to scale up coded values of separate laws into a jurisdiction-level value; finally, I compare techniques for estimating descriptive measures of a jurisdiction's legal institution.

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1 Introduction

Laws, policies, and regulatory rules (henceforth "legal texts") structure our social interactions, political activity, and economic transactions. Laws directly affect society—e.g., whom we can marry, who can vote, what we may consume, what we can choose to do with our bodies—and these legal texts are available to citizens and researchers alike. Laws' consequentiality and accessibility make them a unique type of primary data and a critical datapoint as both an outcome of political processes and a cause of socio-legal phenomena. Social scientists study laws to understand numerous social phenomenon, including colonial legacies, constitutions, immigration, elections, state repression of civil society, and norm-breaking presidential appointments (Berinzon and Briggs, 2019; Blake et al., 2021; Cook-Martín and FitzGerald, 2019; Hummel et al., 2021; Glasius et al., 2020; Kinane, 2021). Despite their importance and accessibility, researchers do not always account for the content within legal texts in the manner that they should, and this article proposes a remedy.

Generations of law and policy scholars have studied how laws affect society. "Dichotomous 'Law/No Law' variables" may be helpful in some instances but rarely suffice by themselves because they obscure legal variability and limit our ability to analyze legal texts accurately (Tremper et al., 2010, p.252). When comparing laws or assessing their respective effects on society, conceptualizing legal texts as bundles of legal rules is increasingly important. Still, knowing what rules exist may not be sufficient for every research question. Laws do not enforce themselves, and "the divergence between law in the books and law in action" (Pound, 1910, p. 22) occurs because some rules go unenforced or because some enforcement actions lack legal authority (see also Cole, 2017).

Institutional analysis offers a remedy. Institutional grammar (Crawford and Ostrom, 1995, 2005), or "IG" for short, translates natural legal language into comparable institutional statements (see also McGinnis, 2011; Siddiki et al., 2012). Researchers use IG to thoroughly inventory a legal text's contents, which moves the analysis beyond oversimplified "law/no law" dichotomies towards precise knowledge of which legal rules exist in the statute, and which do not. After using IG to identify which rules are present, researchers can then study the conditions under which rule-in-use diverge from the rules-in-form. While researchers continue to use and improve IG (e.g., Watkins and Westphal, 2016; Bushouse et al., 2021; Vannoni, 2021; Schlager et al., 2021; Rice et al., 2021), a considerable proportion of IG applications are to legal topics in which a single statute or standalone policy define the legal institution

for the jurisdiction; none tell us how to aggregate multiple laws into a single jurisdiction-level legal institution. While "monocentric legal domains"[1] may appropriately represent some legal topics, increasingly diverse and interconnected societies are likely to politicize and develop increasingly complex legal institutions that contain multiple statutes with overlapping and cross-referencing rules (Pedriana and Stryker, 2017; Ginsburg, 2020; Katz et al., 2020). Governments that seek to use legal institutions to achieve undemocratic aims have two tactics available to them: one makes the institution more restrictive by adding illiberal rules; the other restricts by removing permissive and normatively desirable rules.

Conceptualizing and analyzing jurisdiction-level legal institutions is increasingly necessary for policy scholars. Using IG's inherent strengths for coding individual legal texts, I propose a principled method for aggregating legal rules from multiple legal texts into a single jurisdiction-level legal institution. Doing so allows us to understand and better characterize complex, interconnected, and sometimes contradictory bundles of rules. The remainder of the article proceeds as follows. The following section reviews IG, giving special attention to deontic operators and highlighting the advantages IG-based coding protocols have over rigid and simpler alternatives. I then propose a novel and principled method that aggregates rules from multiple legal texts into a jurisdiction-level legal institution. The fourth section introduces a concrete example demonstrating my method: civil society laws. The fifth section is an applied example of 28 overlapping and cross-referencing laws regulating Kenyan civic space. I close with a discussion addressing the method's strengths and weaknesses and the conclusion reviewing how this method can strengthen public policy research when multiple laws comprise the jurisdiction's legal institution.

2 Institutional Grammar

Institutional analysis uses IG to differentiate three types of institutional statements: rules, norms, and shared strategies. The IG schema offers researchers studying legal texts much more. IG is a powerful tool for analyzing legal text because it transforms natural legal language, such as legal provisions, into a comparable institutional statement (Crawford and Ostrom, 2005, p.140). Known in institutional

[1]This is a callback to the Ostroms' widely cited work discussing monocentric and polycentric systems (e.g., Ostrom, 1959, 2010).

analysis as the ADICO syntax, IG's standard components identify to whom the institutional statement applies (*A*ttribute), denotes expected behavior (*D*eontic), prescribes particular action (a*I*m), specifies the circumstances under which it applies (*C*ondition), and provides the institutionally assigned sanction for noncompliance (*O*r else). I review IG's standard mechanics in the Supplemental Information and direct readers to Crawford and Ostrom (1995, 2005), Siddiki and Frantz (2021), Bushouse et al. (2021), and Frantz and Siddiki (2021) for further explanations.

IG's usefulness is widely recognized, yet the direct application of the tool in empirical research is generally limited to a small number of documents applying an inductive approach (for recent examples see Herzog et al., 2022; Olivier and Schlager, 2022; Deslatte et al., 2022). Basurto et al. (2010) studied four aquaculture regulatory documents and found those documents contained 346 institutional statements. To study the composition of policy change, Weible and Carter (2015) used IG to compare a 1977 and 2006 smoking ban, which included 38 and 62 institutional statements, respectively. Additional applications have compared five climate change laws in Japan and the Republic of Korea (Mi Sun and Yeo-Chang, 2013), ten city charters for statements structuring mayoral powers (Feiock et al., 2016), and identified over 50 institutional statements in laws regulating the freedom of association (DeMattee, 2019).

Though the volume of institutional statements generated by these studies appears large, IG's rigor leads to intercoder reliability scores that typically range between 85-95% (Siddiki et al., 2011, p.91). It is worth noting that these convergence rates are for studies using IG in an inductive, open-ended fashion. Researchers using a semi-structured protocol that codes for a predetermined set of institutional statements (or "items") and allows new statements to emerge should have similarly high intercoder reliability. Indeed, using an IG-based protocol to code a multilingual legal corpus of 288 laws found coders agreed on 1,956 of 2,030 occasions—a 96% intercoder reliability score—that specific legal language matched a particular coding protocol items (Author 2020; 2022).[2] Applying the IG schema both inductively and deductively, researchers have successfully deployed IG-based coding instruments to produce internally consistent measures.

A key reason for rewriting institutional statements in their ADICO components is that doing so facilities comparison to similar institutional statements in use in various contexts. By facilitating a

[2]Intercoder reliability test funded by the National Science Foundation. Award number blinded for review.

rigorous comparison of laws from different countries over time, IG helps qualitative and mixed-methods researchers systematically code legal rules and rigorously compare one legal institution to another. Advancements in automated translation applications for legal research (Author et al 2022) coupled with breakthroughs in computational linguistics as a tool for extracting institutional statements (Vannoni, 2021) will make translating and coding legal texts more efficient and thereby accelerate IG's application in comparative law and policy research.

2.1 How the Deontic Operator Defines an Institutional Statement's Valence

Legal rules stipulate (in)action for particular entities under certain conditions, but rules cannot tell us whether they are inherently good or bad. As researchers, we can apply theory to dichotomize a rule's intrinsic goodness or badness (henceforth, its "valence"). This creates a pithy and accessible framework by which to categorize and productively discuss the many different rules that exist within laws. We can expect different laws to contain language that discusses a common rule. In some instances, different laws discussing a common rule may stipulate consistent action. These rules can be said to have a common valence in these instances.

Rules have opposite valence when they stipulate divergent or contradictory actions. Comparing two constitutions provides an example. Suppose the rule in question is the government's ability to make laws favoring any religion. In that case, rules have an opposite valence if one forbids such action while the other permits it—e.g., The First Amendment to the United States Constitution and Article 12 of the Constitution of Iran, respectively. In IG parlance, the expected behavior (deontic) stipulates a statement's valence; opposite expected behaviors imply opposite valences. Coded numeric values will also be opposite when rules stipulate divergent actions. It is normatively desired—i.e., more democratic—to have a rule establishing the freedom of religion to which a researcher can assign the numeric value [+1]. Researchers can code other normatively desired rules the same numeric value, including expanding the franchise, enhancing judicial independence, minimizing discrimination, and curtailing corruption. The researcher assigns the opposite value, [−1], to rules denying religious freedom. How researchers assign valence and coded values is beyond the scope of this paper but could be grounded in the law, informed by theory, or defended using some other means.

Internal validity is one reason to use IG over simpler coding schema; parsimony is another. IG ably handles situations where a coding protocol item's valence differs between legal texts. Institutional

statements easily transform into their negation by simply manipulating the deontic operator. The three deontic operators—*permitted/may*, *forbidden/must not*, *obliged/must*—have interdefinability and if one is taken as the initial starting point, or the primitive, then the others can be defined in terms of that primitive.[3] This simply involves taking the negation ($\neg$) of the deontic operator. For example, [$\neg$permitted/may] is equivalent to [forbidden/may not]. Negating the deontic operator simultaneously reverses the valence and flips the sign on the assigned value: [$\neg$-1] is equivalent to [+1], and [$\neg$+1] becomes [-1].

I now demonstrate how IG's deontic operator provides researchers flexibility without sacrificing internal validity. To do so, I use the example of a coding protocol item that denies civil society organizations (CSOs)[4] the ability to appeal a regulator's unfavorable decision. This coding item has a restrictive valence and carries a value of [-1] and would appear in natural language as "all CSOs are forbidden to appeal a registration denial or a deregistration order after such a decision has been communicated or else face noncompliance sanction."[5] Now consider Kenya's Societies Act of 1968 (Figure 1), which is a statute inherited from the British colonial government that is still in use today to regulate one of four CSO legal forms in Kenya (Table A1). Section 15 gives a CSO that attempts to register as a society the ability to appeal an unfavorable decision from the regulator. Permitting CSOs to appeal the regulator's decision stipulates action opposite from the coding protocol item forbidding such appeals, which means the Societies Act (§15) and coding protocol item have opposites valences.

I use this example to show two ways in which a simple protocol item potentially introduces error into the coded data. One error type occurs when the simple protocol conflates a law that discusses a legal provision with a valence different from the protocol item, with a law that does not discuss the legal

[3]Summarized from Ostrom (2005, p.143): Let us use permitted/may [P] as a primitive. If referring to a permitted action [a_i], then [P][a_i] reads: "an actor may do a_i." Instructing that the act is forbidden, [F][a_i], can be restated in terms of [P] as [$\neg P$][a_i]. Because [F][a_i] and [$\neg P$][a_i] are equivalent, both would be read: "an actor may not do a_i." The statement that an act must be done, [O][a_i], instructs an actor that they are not permitted to not do [a_i]. Such obligatory actions can be rewritten as [$\neg P$][$\neg a_i$] and be read as: "an actor may not not do a_i." Alternatively, forbidden/must not [F] can be the primitive. Then, [P] can be defined as [$\neg F$][a_i] and [O] can be defined as [F][$\neg a_i$]. With obliged/must [O] as the primitive, [P] can be defined as [$\neg O$][a_i or $\neg a_i$], while [F] can be defined as [O][$\neg a_i$].

[4]I discuss CSO laws in later sections. I define *civil society organizations* as private, self-governed organizations, established on the principle of voluntary association for purposes other than political control and economic profits.

[5]Rewritten using IG: [CSOs][F][appeal registration denial or deregistration order][after such a decision has been communicated][or else face noncompliance sanction].

provision. A simple protocol identifying only restrictive provisions that forbid appeals might score the Societies Act as a "0" or possibly "N/A." The statute undeniably contains language related to appealing decisions, but the simple protocol is too rigid to accommodate it. By contrast, a sophisticated protocol that uses an IG schema to define its coding items can code legal language that does not perfectly match its deontic operator. An IG-based protocol accurately codes the Societies Act's explicit right to appeal an adverse decision by momentarily negating the deontic operator and flipping the coded value's sign: $[F]$ becomes $[\neg F]$, and $[\neg\text{-}1]$ becomes $[+1]$. The negated deontic causes the protocol item to appear in the coder's mind as "all CSOs are not forbidden to appeal a registration denial or a deregistration order after such a decision has been communicated or else face noncompliance sanction."[6]

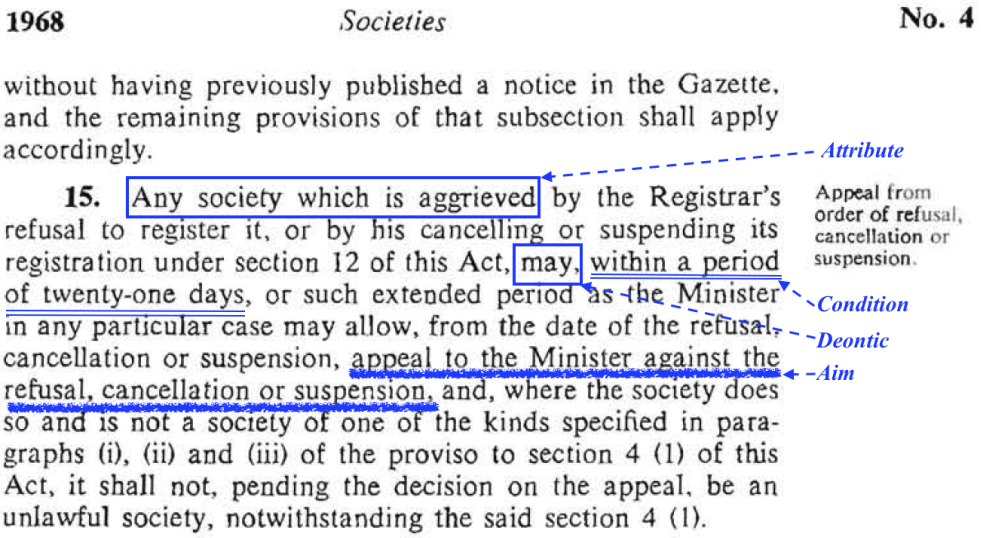

Figure 1: *Section 15 of Kenya's Societies Act of 1968. This legal provision gives societies, a particular legal type of CSOs in Kenya, the option to appeal adverse decisions within 21 days of receiving it. Rewritten using IG: [CSOs][¬F][appeal registration denial or deregistration order][within 21 days after such a decision has been communicated][or else face noncompliance sanction].*

Simple protocol items introduce error a second way when they fail to identify the removal of provisions with a valence different from the rigid protocol item; this is a potentially grave omission. While rigid protocol items may effectively identify instances when governments add restrictive provisions

[6]Rewritten using IG: [CSOs][$\neg F$][appeal registration denial or deregistration order][after such a decision has been communicated][or else face noncompliance sanction].

("restriction by addition"), they miss occasions when governments remove permissive provisions ("restriction through subtraction"). If we take seriously the possibility that there are two tactics through which governments can rule by law—(1) adding restrictive rules and (2) removing permissive ones—then researchers need to account for both when studying changes to legal institutions. A third tactic, "restriction via enforcement" presumably ignores legal rules and is therefore beyond the scope of this paper except to show that rules-in-form do match rules-in-use. Returning to the Societies Act example, a simple protocol coding only restrictive provisions would have missed the change that would have resulted had the Kenyan government amended its Societies Act and removed §15. A sophisticated coding protocol catches even the subtlest changes. IG-based protocol items capably identify when a government adds a new legal rule, removes an existing one, or amends the law in a way that reverses the expected behavior (deontic). For reasons made more evident in the next section, an IG-based protocol would code the Societies Act as "missing" or "unclear" if and only if the law had not contained language concerning the ability to appeal deregistration decisions.

3 Complex Legal Topics and Jurisdiction-Level Legal Institutions

It is increasingly difficult to ignore the relationship between complex social issues and governments' increased reliance on multiple laws to comprise the legal institution for a particular legal topic. I refer to such polycentric situations as statutory multiplicity. For this article, statutory multiplicity exists when multiple laws comprise the legal institution for a particular legal topic in the jurisdiction. Bradford and Chilton (2018) encountered statutory multiplicity when they coded 700 individual business competition laws for 123 countries, noting as many as five laws coexist in one jurisdiction at a given time. Scholarship contains numerous other examples. Between 1964 and 1968, the U.S. Congress enacted several statutes that made the country's civil rights legal topic more complex (Pedriana and Stryker, 2017). Individually, each law forbid discrimination concerning employment (1964 Civil Rights Act), voting (1965 Voting Rights Act), and housing (1968 Fair Housing Act); combined, these statutes added overlapping legal rules to the broader civil rights legal topic. More recently, Katz et al. (2020) apply natural language processing to cluster American and German law into 100 legal topics. Their findings show that, for the period 1994 and 2018, growingly complex legal institutions correlate with socially-relevant legal topics, including welfare and financial regulation, tax and immigration policies,

and environmental law. They attribute this expanding legal complexity to each government's response to policy debates and cultural divisions.

Representative institutions enacting new laws and rewriting existing legal rules does ensure those *de jure* changes are just and equitable responses to social problems. An advocacy organization in the United States alerts us of one example. As of January 31st, 2022, the US Protest Law Tracker,[7] an initiative that spotlights state and federal laws that restrict peaceful assembly, shows 23 states enforce 40 separate statutes restricting the right to peaceful assembly within their jurisdictions. Forty percent of these states have two or more statutes with overlapping rules restricting peaceful assembly: Arkansas (3), Missouri (3), North Dakota (4), Oklahoma (3), South Dakota (4), Tennessee (4), Texas (2), and West Virginia (2). This legal space looks to becoming more complex with 21 states considering an additional 50 bills restricting peaceful assembly. Turning from local to global, Ginsburg (2020) warns that as the number of authoritarian regimes in the international system increases, those governments will cooperate in rewriting rules that entrench authoritarianism. He cautions that "these shifts may not be sharp, but could result from a set of *small qualitative changes* that add up to a qualitative transformation" in which rule-by-law supplants rule-of-law (emphasis added, p.232).

Legal institutions' steadily expanding size, overlapping rules, and subtly changing complexity make it difficult for researchers to identify meaningful modifications. Researchers can discuss a legal institution's descriptive features in various ways, including counting the number of words, tallying the number of statutes that comprise the institution, or identifying how often one legal text cross-references another. Yet changes in these features—e.g., more words, additional statutes, increased cross-referencing—convey net changes and offer little empirical value. In contrast, a fine-grained accounting of rule changes within a legal institution provides considerable leverage in empirical analyses. Since its introduction in 1995, IG has been exceedingly capable of identifying small qualitative rule changes in individual statutes; however, the method is underdeveloped regarding the aggregation of rules across multiple statutes within the same jurisdiction.

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[7]International Center for Not-for-Profit Law `https://www.icnl.org/usprotestlawtracker/`

3.1 Scaling-up to Jurisdiction-Level Legal Institutions

I now present a novel and principled method for aggregating the legal rules of multiple legal texts into a single legal institution. This method is beneficial for situations when the complex legal institution contains interconnected and sometimes contradictory bundles of rules. The method applies to legal corpora of any size for any number of jurisdictions. When applying the method, it is advisable to err on inclusion and exclude only those legal texts that do not discuss any item in the coding protocol. The method does allow researchers to correct mistakes and accommodate new or unknowingly omitted laws. As I detail in the following paragraphs, the method only works for IG-based coding protocols in which coded values turn on the deontic operator while the remaining ADICO components hold the rest of the coding protocol item—i.e., the institutional statement—constant and comparable across contexts.

Step I: Code Laws with IG-Based Coding Protocol Items

After identifying and assembling the legal corpus, researchers systematically code each law using the IG-based coding protocol. Each item in the coding protocol represents a legal rule that a researcher chooses to code in each law. The researcher assigns each coding protocol item a valence, V_i, where $V \in \{-1, +1\}$.[8] My example, which I detail in the next section, uses civil society theory to associate permissive rules with a positive valence. To preview, permissive rules are those that improve organizational pluralism by increasing society's trust in or demand for CSOs, provide CSOs with positive or negative rights, or encourage individuals to support or participate in CSOs. I assign restrictive rules a negative valence. Restrictive rules erode society's trust in (or demand for) CSOs, unnecessarily limit organizational autonomy, deny CSOs the right to due process, or discourage individuals from participating in associations. In extreme instances, these provisions legalize corrosive enforcement actions, restrict the freedom to associate, impose excessive burdens, and remove legal protections.

A coding protocol contains multiple items, i, and each has a valence, V_i. The coded value for the i^{th} item in the j^{th} law is $Item_{i,j}$ (Equation 1). Note that there are two scenarios in which the researcher codes $Item_{i,j}$ as [+1]. The first is that the coding item has a positive valence (the rule is permissive) and the law contains legal language stipulating action in the same direction as the IG-based coding

[8]Metadata, including the law's name, length, or the date it is passed do not receive a valence. Items not assigned a valence are excluded from the jurisdiction-level legal institution.

protocol item. The other scenario is that the coding item has a negative valence (the rule is restrictive) and the law contains legal language stipulating action in the opposite direction as the IG-based item. Here, a negative times a negative is a positive. The same logic applies to the two scenarios in which the researcher codes $Item_{i,j}$ as $[-1]$.

$$Item_{i,j} = \begin{cases} (\mathrm{V}_i) \times (+1) & \text{law}_j \text{ contains language with valence matching coding protocol item}_i \\ N/A & \text{law}_j \text{ does not contain language matching coding protocol item}_i \\ (\mathrm{V}_i) \times (-1) & \text{law}_j \text{ contains language with valence opposite coding protocol item}_i \end{cases} \tag{1}$$

Step II: Aggregate Coded Values for each Coding Protocol Item

After coding all laws in the legal corpus, the next step is to estimate jurisdiction values for each item in the coding protocol. Recall that for any given coding protocol item, $Item_i$, the coded value is $i \in \{-1, N/A, +1\}$, in which $[-1]$ and $[+1]$ indicate restrictive and permissive rules, respectively, and N/A denotes the legal text does not discuss the particular coding item. $Provision_{i,k}$ is a continuous number between $[-1,\ +1]$ that represents the average coded value of a particular coding protocol item across relevant laws active in jurisdiction$_k$ in a given year (Equation 2). Note that while there may be j number of laws active in a jurisdiction at a given time, n represents the number of laws containing language addressing a particular provision i. The term λ_j is the weight a coding item from law_j contributes to $Provision_{i,k}$. For purposes of simplicity and transparency, I suggest averaging provisions across laws equally ($\lambda_j = 1$). If researchers choose to use an alternative weighting technique, I recommend against using weights that may be endogenous to rules—e.g., weights proportional to the number of organizations registered as a certain legal type might drastically underweight all provisions from a law that contains a rule that makes registration nearly impossible.

$$Provision_{i,k} = \begin{cases} 0 & \text{, if } n \in \{\varnothing\} \\ \frac{\sum_{j=1}^{j} \lambda_j \times Item_{i,j}}{n} & \text{, if } n > 0 \end{cases} \tag{2}$$

We can interpret the values for Equation 2 as follows. A value of [+1] indicates that all laws discussing the rule do so with permissive language. In the Kenyan example, this would mean that all CSO legal forms would have the explicit legal authority to appeal a regulator's decision. A value of [−1] indicates that all laws discussing the provision do so with restrictive language. Middling values indicate that the jurisdiction's laws are inconsistent concerning the legal rule. A highly ambiguous 0 results if no law within the jurisdiction has legal language discussing the particular provision or multiple laws discuss the provision but do so with contradictory language from an equal number of legal texts.

Table 1 provides hypothetical cases for how $Provision_{i,k}$ varies depending on the number of laws that discuss it and expected behavior stipulated in each. The table also demonstrates how $Provision_{i,k}$ can vary if researchers omit or overlook rules. Let us again consider the coding protocol item that denies CSOs the ability to appeal a regulator's unfavorable decision. Hypothetical 1 shows there are four laws active in the jurisdiction ($j = 4$), but none contain language addressing the particular provision ($n = 0$); thus, the legal institution is unclear ($Provision_{i,k} = 0$) whether CSOs may appeal a regulator's unfavorable decision. In Hypotheticals 4 and 6, some CSOs may appeal while others are forbidden to appeal. Thus, Hypotheticals 4 and 6 are ambiguous at the jurisdictional level because the number of laws discussing the rule with positive valence counterbalances those with negative valence.

	Law_1	Law_2	Law_3	Law_4	j, n	$Provision_{i,k}$
Hypothetical 1	N/A	N/A	N/A	N/A	4, 0	0
Hypothetical 2	+1	+1	+1	+1	4, 4	+1
Hypothetical 3	-1	-1	-1	-1	4, 4	-1
Hypothetical 4	-1	-1	+1	+1	4, 4	0
Hypothetical 5	N/A	-1	-1	-1	4, 3	-1
Hypothetical 6	-1	N/A	+1	N/A	4, 2	0
Hypothetical 7	-1	N/A	N/A	N/A	4, 1	-1
Hypothetical 8	-1	-1	+1	N/A	4, 3	-0.33
Hypothetical 9	-1	-1	+1	-1	4, 4	-0.5

Table 1: *Scaling-Up Multiple Laws to a Jurisdiction-Level Value of a Single Legal Provision. Columns 2-5 show various values for $Item_{i,j}$. Hypothetical cases show how a particular provision's jurisdiction-level coding value varies with respect to the number of laws discussing it and the expected behavior stipulated in each ($Provision_{i,k}$). All hypothetical cases have four active laws ($j = 4$), but the number of laws discussing the particular provision (n) varies. "N/A" indicates Law_j does not discuss the provision.*

Hypotheticals 3, 5, and 7 show that laws consistently discuss the provision with language that is restrictive; hence $Provision_{i,k} = [-1]$. Hypothetical 2 demonstrates consistency in the opposite direction

and gives the CSOs regulated by each law the ability to appeal a regulator's decision. As a thought exercise, imagine a simple protocol coding only negative restrictions and apply it to Hypotheticals 1 and 2. How would a simple protocol score these cases? It might score them identically because no law, in either case, forbids CSOs from appealing an unfavorable decision. This score would be correct according to the simple protocol's rigid coding rules. Yet, it would also misrepresent the laws' contents. A researcher coding these legal texts should conclude Hypotheticals 1 and 2 are starkly different: the former is silent on whether CSOs may appeal, and the latter provides all CSOs that right. These hypotheticals show that our ability to describe legal institutions precisely depends on our qualitative methods.

Hypotheticals 6 thru 9 demonstrate how internal validity suffers when the coding protocol fails to account for relevant legal language with an opposite valence. Moving from Hypothetical 6 to 7 demonstrates "restriction through subtraction" because lawmakers made the legal institution more restrictive through a subtle change that stripped the permissive rule from Law_3. These two hypotheticals appear the same to researchers who overlook rules with a permissive valence. Moving from Hypothetical 6 to 8[9] shows "restriction by addition" because lawmakers added a restrictive version of the provision to the second law without amending the other laws. Note that these changes alter $Provision_{i,k}$ differently: the former changes $Provision_{i,k}$ by $[-1]$ while latter changes it by $[-0.33]$. These magnitudes are conditional on the number of laws discussing the legal provision and how many of those laws lawmakers change. For instance, moving from Hypothetical 6 to 9[10] is a bolder "restriction by addition" because the process added the restrictive provision to the second and fourth laws.

Step III: Estimate Values for the Jurisdiction-Level Legal Institution

There are at least two techniques for calculating a jurisdiction's legal institution. One technique is to simply sum all values for $Provision_{i,k}$ where Λ_i is the weight $Provision_i$ contributes to $Institution_k$ (Equation 3). Assuming coding protocol items contribute equally and that a researcher is interested in X legal provisions, $Institution_k$ will be a continuous number with possible values $[-X, +X]$. The value $[-X]$ means that a jurisdiction's legal institution addresses all legal provisions and that all laws

[9]Hypothetical 8: $Provision_{i,k} = (1 - 1 - 1)/3 = -0.33$

[10]Hypothetical 9: $Provision_{i,k} = (1 - 1 - 1 - 1)/4 = -0.50$

discussing a particular provision do so with restrictive language. Similarly, the value $[+X]$ means a jurisdiction's legal institution addresses all legal provisions and that all laws discussing those provisions do so with permissive language.

$$Institution_k = \sum_{i=1}^{X} \Lambda_i \times Provision_{i,k} \tag{3}$$

$Institution_k$ is useful for its ability to show variation between legal institutions or the same legal institution over time. Still, it may not measure the legal institution with desired accuracy because Equation 3 gives each legal provision, $Provision_{i,k}$, equal weight. $Institution_k$ assumes provisions that appear qualitatively different—e.g., allowing CSOs to appeal a regulator's decision, providing tax-exempt status, requiring regulators to make registration decisions within a certain number of days, prohibiting regulators from investigating CSOs without reasonable cause—affect the legal institution's permissiveness equally. Not only does perfect substitutability seem like an unreasonable assumption, but it also means that different permutations of provisions can produce identical measures of $Institution_k$. One solution is to allow Λ_i to vary by assigning weights or ordinal values to the various provisions arbitrarily, but this invites critique if such weights can be contested.

Another workaround is to estimate sub-indices by summing together conceptually similar provisions, such as the seven rule types institutional analysis uses to define action situations (e.g., Dunlop et al., 2022) or one sub-index for registration provisions and another for financial provisions. A more sophisticated solution is factor analysis (Harman, 1976; Kim et al., 1978; Spearman, 1987). The method's basic intuition is that for any collection of observed variables, coded legal provisions, for example, factor analysis can assess the degree to which variables "hang together" and measure a latent construct such as a legal institution's *de jure* permissiveness.[11] Like many other statistical tools, however, the method is only as good as the data we give it and depends heavily on principled qualitative methods. Reasonable robustness tests for any weighting scheme or aggregation technique would be to reassign weights or drop randomly selected subsets of laws, re-estimate Equations 2 and 3, and then repeat the analysis and assess the degree to which findings are sensitive to weighting and aggregation assignments.

[11] Examples of scholars applying factor analysis to measure legal and judicial concepts include Linzer and Staton (2015); Spruk and Kovac (2020); Cunningham (2020); Ono and Zilis (2021).

It is beyond the scope of this paper to make a strong claim that one aggregation technique is superior to another; still, readers may appreciate some discussion. Simple summation is transparent, replicable, and understandable to most audiences. These virtues do not necessarily hold with factor analysis. By weighting provisions equally, simple summation can mislead analysts because it allows provisions to negate each other simply because one has a positive valence and the other provision has a negative valence. In practice, a government that aims to repress or restrict society could conceal one highly restrictive provision by enacting it alongside several permissive but relatively unimportant ones; it is foreseeable that simple summation will miss such subtle changes. Factor analysis is testable and allows researchers to present objective measures for how well the estimated index measures the desired construct. Simple summation lacks this feature, leaving it vulnerable to critique. By assigning provisions unique weights, factor analysis allows the measurement to vary according to which provisions change rather than how many change. In the final analysis, both techniques benefit from an IG-based coding protocol that gives researchers a rigorous and internally consistent tool for coding legal texts. Researchers then have multiple options to use this coded data and aggregate multiple laws into a single legal institution. Researchers may find it helpful to repeat their empirical analyses using each technique and discuss whether their results vary.

4 Civil Society Laws

I draw on the laws that regulate civil society organizations ("CSO laws" for short) to illustrate my proposed method. I use the CSO concept to represent a broad array of private, self-governed organizations, established on the principle of voluntary association for purposes other than political control and economic profits. This definition excludes political parties and entities organized to raise and retain profits. The definition includes advocacy organizations, professional associations, and religious congregations. CSOs need not be politically active, prosocial, or even socially desirable. The concept is generally interchangeable with those from different disciplines, including "NGO," "nonprofit," "association," "charity," and "society." In addition to being sufficiently broad, the concept is useful for avoiding confusion in comparative law and policy research. First, I am unaware of any country that uses CSO as a legal form. Second, governments sometimes use the names assigned to social science concepts to define legal forms, including NGO, association, and society (for Kenyan examples see Table A1). Focusing

on narrow concepts may lead analysts to unknowingly exclude legal forms under a different legal name that nevertheless match the CSO concept.

CSO laws offer a valuable and substantively important prism to study complex legal institutions as the cause of social phenomenon (e.g., civic participation, authoritarian repression) or the outcome of a political process (e.g., policy diffusion, democratic transitions). Human rights treaties, international organizations, and scholars have discussed CSO laws for over 50 years. The 1966 International Covenant on Civil and Political Rights (ICCPR) is considered the principal treaty in the area of international human rights with Article 22(1) protecting every person's right to associate with others voluntarily (Henkin, 2000; Kiai, 2013). Thirty years later, the World Bank issued guidance regarding such laws in its "Handbook on Good Practices for Laws Relating to Non-Governmental Organizations" (1997).

Governments have enacted CSO laws that vary over time and between countries despite international organizations' evaluative criteria and suggested practices. Legal summaries and political histories reveal CSO laws possess two noteworthy qualities: each law contains multiple rules, and multiple laws can—and usually do—simultaneously structure the legal institution in the jurisdiction (Breen et al., 2016; Glasius et al., 2020; Mayhew, 2005; Salamon and Toepler, 1997; Bloodgood et al., 2014). These qualities impact policy research in three ways. First, while some laws may contain some legal rules in common, it is generally inaccurate to describe one CSO law as equivalent to another. Laws vary, and systematically coding a legal text is the only way a researcher can make strong claims regarding which rules are present and which are not.

The second implication is that laws are bundles of legal rules. It may be appropriate for researchers to study a specific rule, including rules limiting access to foreign funding or rules that allow governments to dissolve CSOs involuntarily (e.g., Reddy, 2018; Bushouse et al., 2021). Yet single-rule studies may be insufficient for bigger questions, such as how do governments use laws to undermine civil society and retain power? Recognizing this, Glasius et al. (2020) ably execute a multi-rule study that codes ten restrictive rules in 96 countries between 1992 and 2016 (see also Chaudhry, 2022). A greater quantity of restrictive rules suggests a more restrictive regulatory environment, "restriction by addition" as it were. One concern with coding only restrictive rules is that it omits other tactics available to governments that seek to undermine civil society and retain power, namely removing permissive rules or "restriction through subtraction." In CSO laws, restriction through subtraction includes removing the ability to appeal a regulator's adverse decisions to an independent court or stripping the tax-exempt status from

the legal code. Recent changes to voting laws in the United States offer another example. In these bills and statutes, restriction by addition involves adding rules that make it harder to remain on absentee voting lists[12] and incorporating provisions that prohibit snacks and water for voters waiting in line.[13] Restriction through subtraction, in contrast, entails stripping existing rules that provide additional voting days and hours[14] or eliminating provisions that permit election day registration.[15]

Statutory multiplicity is the final implication. Its challenge is smallest when researchers study a precise legal form, such as American 501(c)(3)s or Kenyan Non-Governmental Organizations (NGOs), which requires analyzing fewer laws. Such high intentionality limits comparability and empirical breadth (Sartori, 1970; Goertz, 2012), which is an undesirable tradeoff for researchers who seek a generalizable concept that expands the range of cases to which the research question and legal topic apply. In their extensive review of CSO laws in the fifteen countries, Salamon and Toepler (1997, p.4) study laws regulating organizations that meet five criteria (a high-extentionality conceptualization), rather than narrow subtypes such as "foundations" or "NGOs." They show that in the United Kingdom (ibid: pp.311-41), organizations that match their CSO concept exist as one of six legal types, including companies limited by guarantee, unincorporated associations, friendly associations, industrial and provident societies, trusts, and housing associations. Thus, researchers who aim to study CSO laws in the UK need to consider no fewer than four statutes: the Companies Act, the Friendly Societies Act, the Industrial and Provident Societies Acts, and the Housing Association Act. Moreover, in collaboration with 29 country experts, Salamon and Topeler's canonical work shows that statutory multiplicity affects Brazil with three legal forms (ibid.: p.65), France with four (ibid.: pp.101-102), Germany and Japan, each with five (ibid.: pp.119-120, 97-99), and Egypt with seven unique legal entities (ibid.: pp.89-91). Recent comparative legal research shows six Sub-Saharan African countries enacted 72 laws between 1888 and 2019, referencing 42 legal definitions matching the CSO concept (Author 2020: pp.265-269).

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[12]Arizona Senate Bill 1485 of 2021 "Early Voting List; Eligibility" Retrieved November 20, 2021 from `https://legiscan.com/AZ/drafts/SB1485/2021`.

[13]Florida Senate Bill 90 of 2021 "An Act Relating to Elections." Retrieved November 20, 2021 from `https://legiscan.com/FL/sponsors/S0090/2021`.

[14]See Georgia Senate Bill 202 of 2021 "Election Integrity Act." Retrieved November 20, 2021 from `https://legiscan.com/GA/drafts/SB202/2021`.

[15]See Montana House Bill 176 of 2021 "Close Late Voter Registration on Friday before the Election." Retrieved November 20, 2021 from `https://legiscan.com/MT/text/HB176/2021`.

To review, existing research studying CSO laws reveals certain qualities that affect researchers in three ways: laws vary, each law is a bundle of rules, and multiple laws can comprise the legal institution in a jurisdiction. The first implications are manageable, and scholars have shown it is possible to apply IG to enhance the research studying civil society laws (e.g., DeMattee, 2019; Bushouse et al., 2021). However, the third implication has proven less tractable, and researchers have not been able to move beyond dense legal summaries when multiple laws simultaneously regulate CSOs in a jurisdiction.

Legal researchers and IG methodologists have yet to outline an approach that resolves the statutory multiplicity challenge. My proposal is a principled method for scaling-up the legal rules coded in multiple laws into one legal institution. The method allows qualitative and mixed-methods researchers studying legal texts to harness IG's versatility to code primary sources and aggregate coded values across laws into a single jurisdiction. Doing so helps us understand complex legal institutions and better characterize interconnected and sometimes contradictory bundles of rules.

5 Kenyan Civil Society Laws: A Complex Legal Institution

I now use the Kenyan case to demonstrate how an IG-based coding protocol can overcome the statutory multiplicity challenge. Conceptualizing CSOs as a private, self-governed organization, established on the principle of voluntary association for purposes other than political control and economic profits expands the number of legal forms that must be considered. By this definition, CSOs in Kenya include not only non-governmental organizations but also charitable trusts, companies limited by guarantee, societies, and public benefit organizations (for legal definitions see Supplemental Information Table A1). This broad definition also means that the number of relevant legal texts expands to include both statutes that create each legal form and those that affect those legal forms in some other way.

Figure 2 is a timeline of the legal institution regulating Kenyan CSOs. The figure shows that multiple laws, as few as one to as many as thirteen, simultaneously affect CSOs. Note that Kenya was not a blank slate at its independence in December 1963. Instead, Kenya inherited a legal institution from the British colonial government that included several ordinances regulating voluntary association to some degree, and slowly altered those rules over time.[16] I followed the three-step process outlined in Section 3

[16]I thank a highly reputable legal expert in East Africa for initially suggesting this idea to me. University IRB number and NACOSTI research permit number blinded for review.

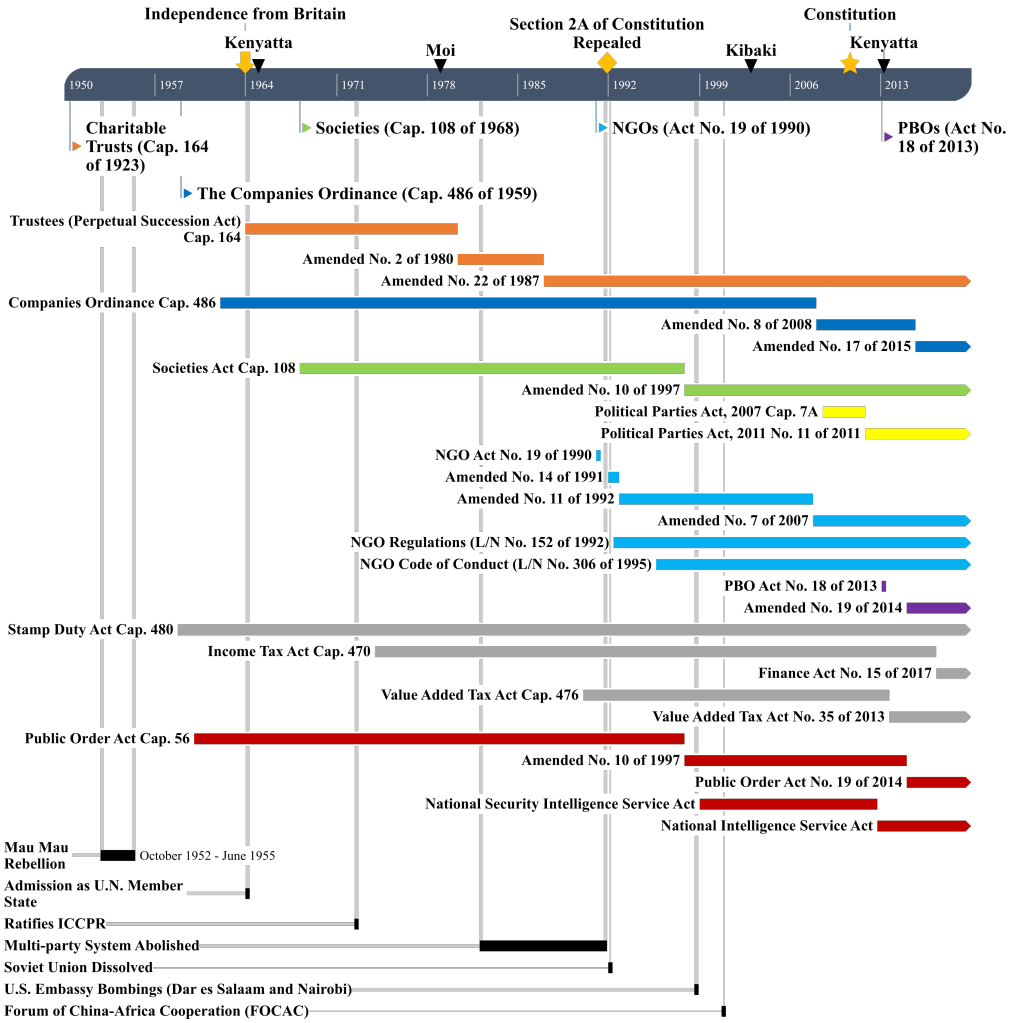

Figure 2: *Kenya's legal institution of civil society laws. Major events, including presidential transitions and new constitutions appear above the timeline. Five laws that create and define particular CSO legal forms appear below the timeline. Horizontal lines represent different statutes, and breaks in those lines represent amendments or repeals. Key domestic and international events appear at the bottom.*

to estimate a jurisdiction-level legal institution. I first coded each law using a 58-item IG-based coding protocol that builds on existing research (DeMattee, 2019). Corroborating existing research studying CSO laws, Kenya's laws each contain at least one and as many as 32 rules. I assigned each IG-based coding protocol item one of three possible values for each law (Equation 1).

I then aggregated coded values for each coding protocol item. Some Kenyan laws discuss common rules with consistent valence. In these circumstances, the legal institution's value for those protocol items is either $[-1]$ or $[+1]$ (Equation 2). It is also the case that different Kenyan laws discuss a common rule with contradictory language. In these cases, the average coded value for a particular IG-

based coding protocol item ranges between [−0.50] and [+0.67]. Because multiple laws simultaneously affect CSOs in Kenya, Kenya's legal institution contains language addressing as few as 16 or as many as 38 rules. In the final step, I estimated values for the Kenyan legal institution using two techniques: simple summation and factor analysis.[17] I evaluate these techniques in the next section.

5.1 Comparing Techniques to Estimate Jurisdiction-Level Legal Institutions

While it is impossible to declare one technique for estimating a jurisdiction-level legal institution as best, it is possible to assess which method seems most reasonable. To do so, I unpack the rules the government altered in 1968, 1973, 1991, and 2013 (represented as vertical lines in Figure 3) and discuss how those changes affected the country's legal institution under different estimation techniques. The following sections discuss the substantive changes to the legal institution at each selected period.

To facilitate comparability, I normalize each index to its 1963 value. The dashed line ("Net Permissiveness") measures permissiveness as a simple summation of all coding items (Equation 3). This operationalization assigns all coding items identical weights in the legal institution, which may be an untenable assumption that introduces measurement error. The solid line ("Latent Permissiveness") measures permissiveness as a latent concept using factor analysis. This operationalization assigns each provision a unique weight in the legal institution. These unique weights cause the indices to diverge even though they measure the same data produced by an IG-based coding protocol. The indices are moderately correlated ($\rho = 0.61$).

1968—President Jomo Kenyatta enacts The Societies Act of 1968

The Societies Act (assented and commenced 1968) added a fifth law to Kenya's legal institution. Its 54 sections sprawl 26 pages. Its legal language addresses 19 coding protocol items, including 11 permissive provisions. Among its many provisions, the law gives CSOs registered as societies the right to have courts settle disputes (§41) and allows the public to access documents lodged with the regulator (§48). Other permissive provisions prevent the government from rejecting registration for reasons other than those prescribed by law (§11), establishes a clear process for canceling and suspending registration

[17] Five factors comprise the permissiveness construct discussed above. The scale's reliability coefficient (Cronbach's α) is 0.937, which is above the 0.75 threshold generally considered acceptable. The Cronbach's α for the underlying factors range between 0.821 and 0.981.

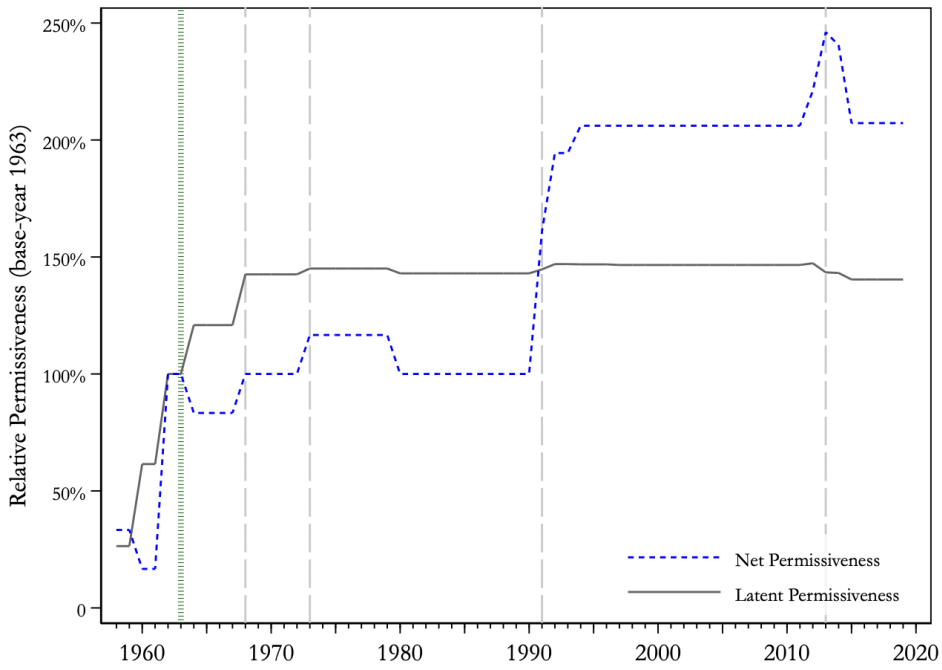

Figure 3: *Comparing techniques measuring Kenya's legal institution. Net Permissiveness (dashed line) measures permissiveness by first averaging each coding item across all laws, and then measuring the legal institution as a simple summation of those average values. Latent Permissiveness (solid line) measures permissiveness by first averaging each coding item across all laws, and then performing a factor analysis on those coded values. Thick vertical line represents Kenyan independence (1963), dashed vertical lines represent four examples when Kenya altered its legal institution.*

that places the burden of proof on the government to show that such actions are necessary (§§12-14), and protects societies from unreasonable searches (§§31, 38-39). The Societies Act contains restrictive provisions, including allowing the minister to make new rules unilaterally (§53), making it illegal for CSOs of ten or more persons to exist without applying for registration (§9), and requiring societies to notify or receive permission from the the regulator before making organizational changes, including changing its name, amending bylaws, electing new officers, or dissolving itself (§§16-20, 23, 25-26, 29).

Incorporating the law's rules into Kenya's young legal institution added more permissive rules than restrictive ones. Net permissiveness increased 17%, returning the index to its 1963 level. Latent permissiveness increased 22%, its largest gain in the post-independence period.

1973—President Jomo Kenyatta enacts The Income Tax Act of 1973

The Income Tax Act (assented 1973, commenced 1974) added a sixth law to Kenya's legal institution. Like other tax and finance laws, this statute is massive and includes 133 sections and 13 schedules. Despite its size, it contains only one rule affecting Kenyan CSOs. Section 15(w) allows private entities to take tax deductions for donations made to charitable organizations. The 1973 statute marks the institution's first appearance of the financial incentive, and complements the preexisting tax-exemption rule established by the Stamp Duty Act of 1958 (§52(2)(b)). Adding the tax-deduction permissive rule increased net permissiveness 17%, the same relative increase as the entire Societies Act. The effect on latent permissiveness was smaller, by contrast, and increased the index by 2.5%.

1991—President Moi enacts The Non-Governmental Organizations Co-ordination Act of 1990 and the The Statute Law (Repeal and Miscellaneous Amendments) Act of 1991

President Moi's administration oversaw many changes to the Kenyan legal institution, including two laws in 1991 (Figure 2). The NGOs Act (assented 1991, commenced 1992) contains 35 sections with legal language addressing 20 coding protocol items. It overlaps with the Societies Act on 15 items, but the laws have opposite valence on only two of these. The first is that the Registrar of Societies must make documents lodged with it publicly available (§48), while the NGOs Board has no obligation to do the same (§7(c)). The other is that the Registrar of Societies is forbidden to reject registrations for reasons other than those prescribed (§11), while the NGOs Board has the discretion to refuse registration if it believes the applicant's proposed activities are not in Kenya's national interest (§14(a)). Each law provides the opportunity to appeal adverse registration outcomes: Societies Act §15 and NGOs Act §19. The NGOs Act added other permissive rules to the legal institution, including establishing a NGO Council to self-regulate the sector through a code of conduct (§§22-24), strengthening oversight measures of the regulator's activities and expenditures (§§4, 6, 30-31), and allowing a registration certificate to serve as "conclusive evidence of authority to operate throughout Kenya" (§12(2)) thereby preventing the the need for additional operating licenses or local permits.

In December 1991, the Statute Law (assented and commenced 1991) amended 21 laws in Kenya's legal code, including the NGOs Act passed earlier that year. Its 14 changes to the NGOs Act primarily clarify definitions. The amendments deleted the restrictive provision that each NGO registration au-

tomatically expires after 60 months (NGOs Act §§13, 15). However, those amendments do not replace that provision with a permissive one that explicitly makes registrations permanent. Together, these laws affected the legal institution by increasing net permissiveness over 60% and latent permissiveness by less than 2%.

2013—President Kibaki enacts the Public Benefits Organizations Act, and President Uhuru Kenyatta enacts the Value Added Tax Act

The 2013 PBO Act[18] contains 71 sections and six schedules. Once commenced, it will replace the NGOs Act (§70), give CSOs currently registered as NGOs one year to seek registration as a PBO (Fifth Schedule §§5, 7), and reassign government employees from the NGOs Board to the new Board of the Authority regulator (Fifth Schedule §6). The NGOs Act (amended 2007) overlaps with the PBO Act on 16 coding items, with opposite valence on two. Under the PBO Act, CSOs *may* register as a PBO with the regulator (§8), while under the NGOs Act, CSOs *must* register as an NGO (§22(1)). The second difference is that under the PBO Act, the regulator must make accessible "to public inspection during ordinary business hours" documents it requires organizations to lodge with it (§§15, 31, 41). The new law contains several rules friendly to CSOs that register as the legal form, including a presumption of registration (§12), requiring the regulator to given a written explanation for not registering a CSO and allowing the CSO an opportunity to rectify any concerns (§§9, 16), granting the legal form tax-exempt status and tax-deductions to its supporters (§33, Second Schedule), and allowing PBOs to engage in economic activities to generate revenues used solely to support their charitable purpose (§65). While the new law no longer gives the regulator the authority to control NGOs' operational activities (NGOs Act §7(a)), the PBO Act imposes a modest requirement on membership numbers for registration (§8(4)(e)).

The Value Added Tax Act (assented and commenced 2013) reinforced the tax-exempt status already given to multiple CSO legal forms in the country (First Schedule, Section B, Part II, §11(b); Second Schedule, Section B, §§7-8). That permissive rule already existed in the legal institution, so the Value Added Tax Act did not change the institution's rules. Taken together, the PBO Act and Value Added Tax Act added two new laws while removing the NGOs Act, leaving 13 laws to comprise the legal

[18] Assent January 14, 2013. Still not commenced as of December 31, 2019.

institution. Net permissiveness increased 25%, its second-largest expansion after independence, while latent permissiveness receded by almost 4%.

In aggregate, permissiveness measured as a simple summation suggests the concept remained relatively unchanged between independence and the early 1990s, a period during which the number of active laws doubled. It also suggests that President Moi's administration (1978 to 2002) is responsible for the most significant expansion of permissive legal rules regulating Kenyan CSOs. By the end of the period, the net permissiveness technique estimates that the legal institution was twice as permissive in 2019 as it was at independence. Permissiveness measured as a latent construct suggests that President Jomo Kenyatta's administration (1964 to 1978) accomplished the most concerning establishing permissive rules. The latent permissiveness technique suggests that the legal institution reached peak permissiveness by the mid-1970s. By the end of the period, the Kenyan institution was only 50% more permissive than the British rules it inherited.

The previous sections compared how changes to individual statutes affected the Kenyan legal institution as measured through simple summation and factor analysis. Next, I show how the choice to code either restrictive or permissive rules while omitting the other is a conceptualization decision that has profound empirical and theoretical implications. As before, Figure 4 shows the degree to which *de jure* permissiveness changes over time relative to the base year (1963). The panel on the left measures permissiveness using only restrictive rules to calculate the indexes, which I achieve by recoding the coded data from [+1] to [N/A] (Equation 1). Similar to Figure 3, net permissiveness increases over time. Because the index counts only restrictive rules, we can attribute its softening to the extraction of restrictive rules. Net permissiveness in Figure 4 (left panel) peaks earlier and peaks lower than Figure 3. Latent permissiveness, by contrast, decreases over time. This suggests the government may have substituted less-restrictive rules with highly-restrictive rules over time. As expected, omitting permissive rules distorts and underestimates the permissiveness measurements. Likewise, ignoring restrictive rules (Figure 4, right panel) distorts and overestimates the indexes. In the permissive/restrictive dichotomy that I present, governments can make the legal institution more restrictive by adding restrictive rules, subtracting permissive rules, or some combination of the two. Legal rule changes can be subtle, and comparing Figures 3 and 4 provides visual evidence supporting my argument that if a researcher aims to capture subtle rule changes it is necessary to code for different rules.

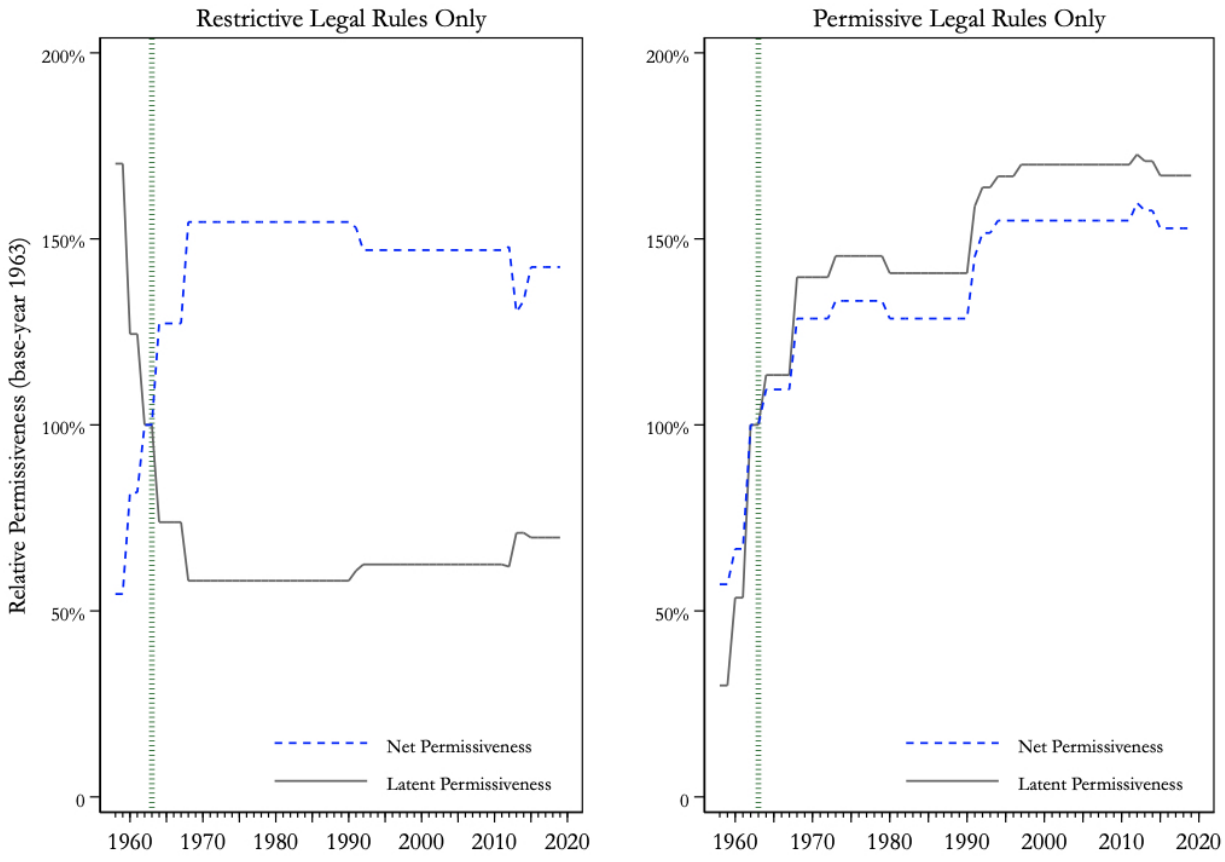

Figure 4: *Measuring the legal institution using only one restrictive (left) or permissive (right) rules.*

6 Discussion

The method I have proposed allows us to conceptualize laws as separate bundles of legal rules and then aggregate them into jurisdiction-level legal institutions. Even with IG's formalized approach to content analysis, there is a danger that merging rules from different legal texts and presenting them as a single legal institution distorts legal reality. My method, for example, proposes averaging the coded value for each coding protocol item across all laws active in the jurisdiction (1) and then aggregating those averaged values into an indicator measuring one dimension of the institution (3). Does doing so risk losing the depth and detail of reality? Yes, almost certainly. Generations of policy scholars show us that laws and policies do more than permit, forbid, or require actions. Policies assign benefits and burdens (e.g., Schneider and Ingram, 1988, 1993), (re)distribute resources (e.g., Lowi, 1972), communicate via implicit and embedded symbols (e.g., Mettler and Soss, 2004; Mettler, 2005, 2011), and depend on

bureaucrats for fair and impartial enforcement (e.g., Hassan, 2020; Lipsky, 1980). Indeed, there are research questions for which IG-based coding protocols and jurisdiction-level legal institutions are simply not the best methods.

Yet, I argue that a nontrivial amount of research objectives should prefer imprecise summations to approaches that omit relevant legal rules or whole laws that comprise part of the jurisdiction's legal institution. Jurisdiction-level measures have a rich history in social science research, including the Polity IV and Polity5 Projects (Marshall et al., 2019), World Governance Indicators (Kaufmann et al., 2009), V-Dem (Coppedge et al., 2021), and judicial independence (Linzer and Staton, 2015). These datasets all contain imperfect indicators that are invaluable for researchers. At the simplest level, my method allows us to assess the degree to which a country's *de jure* legal institution matches other indexes measuring rules-in-use, such as Freedom House's civil liberties indicators or the CIVICUS Civic Space Monitor. Analysts can also estimate the legal institution's year-over-year change to study research questions, including "under what conditions does a country alter its civil society laws?" and "does autocratic learning diffuse restrictive civil society legal provisions?" Using the measure as an independent variable can assist in case selection for mixed-methods research designs that address questions such as "do CSO laws affect the co-production of public service goods, volunteerism, democratic participation, or democracy?" and "do different regulators in the same country implement the legal institution differently?"

7 Conclusion

Why legal institutions change, how governments enforce them, and what effects they have on society have been the subject of scholars for generations. However, we lose the ability to draw connections or make causal claims between laws and social outcomes as the number of laws that comprise a legal institution increases or our data collection methods fail to account for the different tactics governments have to use laws to achieve undemocratic aims. The method I have described allows researchers to overcome statutory multiplicity's challenge and fully account for the two tactics governments use to rule by law.

Aggregating legal rules from multiple legal texts into a single legal institution helps us understand and better characterize complex, interconnected, and sometimes contradictory bundles of rules. My

method extends the IG tool first introduced by Crawford and Ostrom (1995; 2005) to increase the rigor of qualitative and quantitative research foundational to scholars. The method is most valuable for legal topics in which multiple laws comprise the legal institution in a single jurisdiction, a situation I refer to as statutory multiplicity. The challenge of statutory multiplicity increases as researchers ask big questions and seek to expand the number of cases to which their research questions apply. The challenge will also intensify as growingly diverse and interdependent societies politicize and complexify their legal institutions by adding and rewriting cross-referencing rules (Ginsburg, 2020; Katz et al., 2020).

Governments who seek to rule by law have two tactics at their disposal: add restrictive rules ("restriction by addition") and remove permissive rules ("restriction through subtraction"). Researchers who focus on one and not the other may be analyzing biased data and generating incomplete theory. Scholars need a data collection tool that accounts for both tactics when studying changes to legal institutions. Utilizing IG's inherent strengths, my method allows researchers to code noticeable rule changes just as easily as subtle ones, such as when governments make their institutions more restrictive by removing a permissive and normatively desirable rule. If researchers code all relevant laws unbiasedly and thoroughly, researchers can later apply techniques to make the averaging and aggregating process more sophisticated, including weighted averages and factor analysis, without jeopardizing transparency and replicability. Researchers can later return to their IG-based coded data to ask related questions inaccessible to jurisdiction-level indicators.

Researchers accept solemn burdens when coding legal texts. They must thoroughly code, without bias, the legal rules that comprise a law. They must then judge what is meaningful and present those results accurately. The alternative to collecting and coding primary sources is to use off-the-shelf data. There may be danger in relying too much on secondary sources, such as coders who might be motivated by factors other than conducting objective research or who lack the resources and skills necessary to provide reliable data. Echoing previous caveats of using off-the-shelf data (Bennett, 2007; Jerven, 2013), to what degree should researchers take as given secondary sources' accuracy, rigor, and objectivity? The remedy suggested then applies now: "take between five and ten random observations from the dataset and attempt to code the variables from the ground up" (Goemans, 2007, p.12). This prescription is both practical and effective. It also underscores the importance of having a principled method for coding and aggregating legal texts in the first place.

Law and policy scholars explore critical topics that should be studied with varied approaches. Researchers who study laws' origins and consequences face causal inference challenges. They cannot randomize the legal treatment that affects society, nor can they randomize the units of society that receive a legal treatment. While natural experiments are sure to emerge, observational data and unobserved variables will make those quasi-causal analyses imperfect. One challenge that researchers do not encounter is access to legal texts. Laws are public documents that researchers can access, read, code, and use in their research designs, which brings new meaning to the old maxim *"ignorantia juris non excusat."* In this sense, knowing what is and is not in a legal institution is one factor researchers can ascertain with a high degree of certainty. This article can therefore be read as a plea to quantitatively-inclined researchers to take a moment and read in their entirety the laws they are analyzing. More importantly, this article reviews and demonstrates IG's power for all researchers studying legal texts and proposes a principled method for aggregating the legal rules coded in multiple laws into a single legal institution. Scholars can utilize this method in qualitative or mixed-methods research designs to improve the quality of their analyses studying the causes and consequences of laws and policies.

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Supplemental Information

Legal Bibliography

An IG-based protocol coded the following legal texts to provide the data necessary for the applied example. All laws are available from National Council for Law Reporting (Kenya Law) at `http://kenyalaw.org/kl/`. Laws listed chronologically by the date the Government of Kenya enacted them.

1. Stamp Duty Act Cap. 480. Kenya. No. 31 of 1958 (1958). Enacted: October 1, 1958.
2. The Public Order Act Cap. 56. Kenya. No. 54 of 1960 (1960). Enacted: January 1, 1960. Amending Cap. 56 (1950).
3. The Companies Ordinance. Kenya. Chapter 486 (1962). Enacted: 1-Jan-62.
4. The Trustees (Perpetual Succession Act) Cap. 164. Kenya. No. 19 of 1964 (1964). Enacted: January 1, 1964. Amending Cap. 164 (1948).
5. The Societies Act Cap. 108. Kenya. No. 4 of 1968 (1968). Enacted: February 16, 1968.
6. Income Tax Act Cap. 470. Kenya. (1973). Enacted: January 1, 1974.
7. The Land (Perpetual Succession) (Amendment) Act. Kenya. No. 2 of 1980 (1980). Enacted: May 2, 1980. Amending Cap. 164 (1948).
8. Trustees (Perpetual Succession) Act. Kenya. No. 22 of 1987 (1987). Enacted: January 1, 1987. Amending Cap. 164 (1948).
9. Value Added Tax Act. Kenya. Cap. 476 (1989). Enacted: January 1, 1990.
10. The Non-Governmental Organizations Co-ordination Act. Kenya. No. 19 of 1990 (1990). Enacted: Amended before enacted.
11. The Statute Law (Repeal and Miscellaneous Amendments) Act, 1991. Kenya. No. 14 of 1991 (1991). Enacted: December 27, 1991. Amending and commencing No. 19 of 1990.
12. The Statute Law (Miscellaneous Amendments) Act, 1992. Kenya. No. 11 of 1992 (1992). Enacted: October 23, 1992. Amending No. 19 of 1990.
13. Non-Governmental Organizations Co-ordination Regulations, 1992. Kenya. Legal Notice No. 152 of 1992 (1992). Enacted: May 22, 1992. For matters relating to the NGOs Act No. 19 of 1990.
14. Non-Governmental Organizations Council Code of Conduct, 1995. Kenya. Legal Notice No. 306 of 1995 (1995). Enacted: September 8, 1995. In exercise of powers conferred by section 24 of the NGOs Act No. 19 of 1990.
15. The Statute Law (Repeals and Miscellaneous Amendments) Act, 1997. Kenya. No. 10 of 1997 (1997). Enacted: November 7, 1997. Amending Cap. 56 (1950).
16. The Statute Law (Repeals and Miscellaneous Amendments) Act, 1997. Kenya. No. 10 of 1997 (1997). Enacted: November 7, 1997. Amending Cap. 108 (1968).
17. National Security Intelligence Service Act. Kenya. No. 11 of 1998 (1998). Enacted: January 1, 1999.

18. The Statute Law (Miscellaneous Amendments) Act. Kenya. No. 7 of 2007 (2007). Enacted: October 15, 2007. Amending No. 19 of 1990.

19. Political Parties Act, 2007. Kenya. Cap. 7A (2007). Enacted: January 1, 2008.

20. The Companies Act. Kenya. Chapter 486 (2008). Enacted: January 1, 2008. Amending Cap. 486.

21. Political Parties Act, 2011. Kenya. No. 11 of 2011 (2011). Enacted: November 1, 2011. Replacing Cap. 7A of 2007.

22. National Intelligence Service Act. Kenya. No. 28 of 2012 (2012). Enacted: October 5, 2012. Replacing No. 11 of 1998.

23. Value Added Tax Act. Kenya. No. 35 of 2013 (2013). Enacted: September 2, 2013. Replacing Cap. 476 (1989).

24. Public Benefits Organizations Act. Kenya. No. 18 of 2013 (2013).

25. The Public Order Act (Amendment). Kenya. No. 19 of 2014 (2014). Enacted: January 1, 2014. Amending Cap. 56 (1950).

26. The Security Laws (Amendment) Act, 2014. Kenya. No. 19 of 2014 (2014). Enacted: December 22, 2014. Amending No. 18 of 2013.

27. Companies Act. Kenya. No. 17 of 2015 (2015). Enacted: September 15, 2015. Replacing Companies Act, Cap. 486.

28. The Finance Act. Kenya. No. 15 of 2017 (2017). Enacted: April 3, 2017. Amending Cap. 470 (1973).

Legal Type	Legal Definition
Company Limited by Guarantee	"a company having the liability of its members limited by the memorandum to such amount as the members may respectively thereby undertake to contribute to the assets of the company in the event of its being wound up [and] formed for promoting commerce, art, science, religion, charity or any other useful object, and intends to apply its profits, if any, or other income in promoting its objects, and to prohibit the payment of any dividend to its members."
Non-Governmental Organization (NGO)	"means a private voluntary groups of individuals or associations, not operated for profit or for other commercial purposes but which have organized themselves nationally or internationally for the promotion of social welfare, development, charity or research through mobilization of resources."
International NGO	"means a Non-Governmental Organization with the original incorporation in one or more countries other than Kenya, but operating within Kenya under a certificate of registration."
National NGO	"means a Non-Governmental Organization which is registered exclusively in Kenya with authority to operate within or across two or more districts in Kenya."
Perpetual Trust (known locally as "charitable trust")	"trustees who have been appointed by any body or association of persons established for any religious, educational, literary, scientific, social, athletic or charitable purpose, or who have constituted themselves for any such purpose."
Public Benefit Organization	"means a voluntary membership or non-membership grouping of individuals or organizations, which is autonomous, non-partisan, non-profit making and which is—(a) organized and operated locally, nationally or internationally;(b) engages in public benefit activities in any of the areas set out in the Sixth Schedule; and (c) is registered as such by the Authority.
Society	"includes any club, company, partnership or other association of ten or more persons, whatever its nature or object, established in Kenya or having its headquarters or chief place of business in Kenya, and any branch of a society [but not including companies, corporations, firms, cooperative societies, schools, building societies, banks, international organizations, and unlawful societies]."

Table A1: *Kenyan Legal Definitions Matching the CSO Concept.*

Reviewing the ADICO Syntax

IG transforms natural legal language into an institutional statement. Institutional statements, as Crawford and Ostrom (1995) originally formulated, concatenate five components: [**A**TTRIBUTE] [**D**EONTIC] [A**I**M] [**C**ONDITION] [**O**R ELSE]. Crawford and Ostrom (2005, pp.149-52, 298) define each component as:

- **A**TTRIBUTE (A) identifies to whom the institutional statement applies, and if no attributes are named, then the default assumption is all members of the group;
- **D**EONTIC (D) denotes the expectation of behavior identified by the qualifiers 'may' (permitted), 'must' (obliged), and 'must not' (forbidden);
- A**I**M (I) prescribes particular action or outcome, or specifies forbidden actions or outcomes;
- **C**ONDITION (C) explains when and where the institutional statement applies, and if no conditions exist, then the default assumption is that it applies to all persons, at all times and all places, under all circumstances;
- **O**R ELSE (O) provides the institutionally assigned sanction for noncompliance. This component must have three qualifications: (i) sanctioning provision is the result of an explicit collective-choice decision that is separate from any internal or social penalty, (ii) be backed by at least one other institutional statement that if noncompliance occurs changes the DEONTIC assigned to some AIM for at least one actor, and (iii) affect the constraints and opportunities of actors responsible for monitoring the conformance of offenders.

Only if all five components are present is an institutional statement a *rule*. If a statement is missing the "or else," then there are no institutionally assigned consequences for breaking the rule, which makes the institutional statement a *norm*. If a statement also omits an obligation on behavior (D) then it is a shared *strategy*.

Table A2 contains three examples of institutional statements in their natural language and rewritten in IG. The simplest example regulates using a shared microwave, and the second example uses the First Amendment to the United States Constitution. Both explicitly identify to whom the statements apply, set behavior expectations, and discuss particular actions or outcomes. Neither identifies conditions under which they apply; therefore, the default assumption is that they apply to all members under all circumstances. And while both omit an explicit sanction for noncompliance, only the first is reduced to a norm. A strict interpretation of IG might conclude the First Amendment is a norm if one did not know it was part of a broader legal institution. The First Amendment is a rule because other rules back

it, specifically the Supremacy Clause (Article VI, Clause 2) that allows unconstitutional legislation to be challenged or voided.

The final example is ICCPR Article 22(2), which establishes a threshold for all laws attempting to regulate voluntary association. The covenant's preamble explains that it only applies to those countries that have ratified the international agreement. International law draws on Article 22(2) to establish a three-part test that all attempts to regulate voluntary association must be: (1) prescribed by law and use sufficiently precise and accessible language; (2) established to meet legitimate aims specified by Article 22(2) to include "national security or public safety, public order, the protection of public health or morals or the protection of the rights and freedoms of others"; (3) be "necessary for democracy" so as to meet a pressing social need in a proportional manner (U.N. Human Rights Committee 2006, U.N. Human Rights Committee 2007, U.N. Human Rights Committee 2015). While the ICCPR does not provide an explicit sanction for noncompliance, making it an international norm, it does provide a pathway to remedy for those whose rights or freedoms are violated (Article 2(3)(a)).

	Example 1	Example 2	Example 3
	"If you use the microwave, you must clean up your own mess!"	*"Congress shall make no law respecting an establishment of religion, or prohibiting the free exercise thereof; or abridging the freedom of speech, or of the press; or the right of the people peaceably to assemble, and to petition the Government for a redress of grievances."*	*"No restrictions may be placed on the exercise of [the right to freedom of association with others] other than those which are prescribed by law and which are necessary in a democratic society in the interests of national security or public safety, public order (ordre public), the protection of public health or morals or the protection of the rights and freedoms of others. This article shall not prevent the imposition of lawful restrictions on members of the armed forces and of the police in their exercise of this right."*
(A)	"all microwave users"	"the government"	"governments that have ratified the ICCPR"
(D)	"must" / "forbidden to not"	"must not" / "forbidden to"	"may"
(I)	"clean the mess you made in the microwave"	"enact legislation favoring any one religion, limit expressing ideas through speech or press, gathering as private voluntary associations or as groups to protest, practicing religious beliefs."	"regulate the right to freedom of association"
(C)	"all users under all circumstances"	"all U.S. governments entities under all circumstances"	"if such regulations are prescribed by law, meet legitimate aims, and are necessary for democracy"
(O)	omission implies norm	"the law conflicts with the Constitution per the Supremacy Clause (Article VI, Clause 2)"	"any person whose rights or freedoms as herein recognized are violated shall have an effective remedy, notwithstanding that the violation has been committed by persons acting in an official capacity"

Table A2: *Institutional Statements Rewritten in IG. Example 1 from Crawford and Ostrom (2005, p.139). Example 2 is First Amendment to the U.S. Constitution. Example 3 is ICCPR Article 22(2).*