Mapping Informal Institutions – a Global Dataset

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[PRELIMINARY VERSION: PLEASE DO NOT CITE]

Abstract

The crucial importance of institutions for economic and social development has become part of the conventional wisdom in economics. Over the last couple of years, economists have become particularly interested in the potential role of informal – or internal – institutions but their measurement has been a serious challenge. This paper offers a dataset covering a wide variety of variables (more than two dozen altogether) on internal institutions, i.e. institutions whose non-compliance is sanctioned by members of society, in up to 100 countries. It draws on individual and collective measures as well as contemporaneous and historical sources of information. In reviewing the currently available data, it also relies on previous surveys such as Engel (2011) and Cochard et al. (2021) and updates them until 2022. The resulting dataset can be used in many ways, e.g. for ascertaining the compatibility between different types of institutions or documenting changes in internal institutions over time.

Keywords: internal institutions, informal institutions, social norms, culture, conventions, customs, Institutional Economics.

JEL classification: A13, D90, K00, O10, Z10

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1. Introduction

It has been claimed that "institutions rule" (Rodrik et al., 2004) or even that "informal institutions rule" (C. Williamson, 2009). By now, a number of empirical studies provide evidence in favor of that claim. Gorodnichenko and Roland (2011, 2017, 2021), demonstrate that institutions promoting individualism – as opposed to collectivism - not only explain cross-country differences in growth and productivity, but also in innovativeness and the establishment of democracy. Informal institutions can explain within country income variations across a number of European countries (Tabellini 2008a, b, 2010) but also differences in the welfare state (Gründler and Köllner 2020). Digging even deeper, other recent studies show how the institutions underlying kinship intensity are not only the basis for corresponding moral systems but also for long-term development prospects (Enke, 2019; 2023; Henrich, 2020; Moscona et al., 2020; Schulz et al. 2019).

Gutmann et al. (2023) recently showed that constitutional compliance, i.e. the degree to which governments comply with the text of their constitutions, is a function of both individualism and the willingness to accept hierarchical relationships: the higher the degree of individualism, the higher constitutional compliance, the higher the willingness to accept hierarchies, the lower it is. Both individualism and the acceptance of hierarchies are backed by dozens of informal institutions (Hofstede, 1980). Governments complying with constitutional rules are an important aspect of the rule of law, implying that internal institutions are also important for the degree to which countries can be expected to actually implement the rule of law.

The degree to which entire societies are attributed different levels of "individualism" – and similar traits – is, however, a very coarse measure for internal institutions. According to most definitions, individualism is not an institution itself but can be thought of as composed of dozens of internal institutions. Coming up with precise measures constitutes a serious challenge. Ostrom (1996, 208) pointed out that these institutions "may be almost invisible to outsiders, especially when they are well accepted by participants who do not even see them as noteworthy."[1] Empirical research interested in identifying the relevance of informal institutions has, thus, been hampered by the lack of appropriate indicators.

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[1] Voigt (2018, 8f.) contains a list of seven reasons spelling out these difficulties in more detail. In that paper, a number of proposals how internal institutions could be measured were made without, however, offering concrete data.

Our paper aims at changing this and contains a systematic collection of indicators that may sensibly capture different types of internal institutions – and their differences across countries. Institutions – loosely defined as commonly known rules endowed with a sanctioning mechanism – are always directed at a multitude of people. They serve to make the behavior of others more predictable. Institutions have therefore often been described as generally serving to increase predictability in the behavior of peers (horizontal) or of authority (vertical), which reduces transaction costs.

Decisions regarding the inclusion of indicators into our dataset were therefore based on this function. We are particularly interested in institutions enhancing impersonal exchange, institutions enabling groups of individuals to act collectively, and – closely related - institutions enabling members of a group to monitor their government.

Internal institutions are often assumed to be largely time-invariant (Williamson 2000) but there are also internal institutions that have been subject to rather rapid change (Inglehart and Welzel 2005). Since our dataset includes both contemporaneous as well as historical indicators, it opens up new doors to shedding light on differentials in time (in)variance across internal institutions.

Although the commandments or prohibitions contained in institutions address individuals, they are relevant for entire groups. Culture has not only been interpreted as a collective phenomenon impacting individual behavior but as being part of our "collective brains" (Henrich 2016, chapter 12), a way of thinking that does not require conscious deliberation but relies on cumulative experience shared by members of society. This suggests that it may be useful to include collective measures of institutions, even though they need to be transmitted by individuals. In all, the dataset includes data collected by surveys, different types of experiments, and important language traits.

We contribute to recent efforts to shed more light on cultural and value traits of societies that may affect the enforcement and relevance of other institutions. Related studies include the Ethnographic Atlas (Murdock 1967) and the Global Preference Survey run by Falk et al. (2018). The Ethnographic Atlas includes 1,265 ethnic groups and provides information on their kinship institutions, the prevalent subsistence mode etc. It is, however, rather weak with regard to Europe and does not have a specific focus on internal institutions. Falk et al. (2018) elicited their information by implementing surveys in 76 countries. Their study contains a wealth

of information but focuses on preferences rather than institutions. In a sense, then, our paper complements theirs in two ways: our focus is on institutions (and not preferences) and we rely (at least partially) on information elicited by means other than surveys. Most recently, Cappelen et al. (2022) published a "Global Universalism Survey" eliciting information from among 64,000 individuals in 60 countries about the degree to which they believe that their moral obligations refer equally to everyone. Although related, their survey focuses on beliefs about moral obligations but not on internal institutions.[2]

Our paper probably contains the most comprehensive dataset on internal institutions currently available. We build on previous work and combine informational sources that are usually assessed separately. In addition to surveys, we report results from experiments that have been implemented in various countries based on the argument that a number of standard experiments can serve to infer underlying institutions. The dataset we present incorporates data reported in previous surveys and meta-studies such as Engel (2011) and Cochard et al. (2021). Our dataset adds value by updating the paper by Engel (2011) on Dictator Games, by Chaudhuri (2011) on the public goods game, by Johns & Mislin (2011) on trust and by Cochard et al. (2021) on the ultimatum game.[3]

It adds value as we systematize these data in a way that facilitates comparison to other types of data, and we further incorporate more recent studies not yet included in these papers. This study is, however, not a metastudy; our focus is on offering proxies for a number of internal institutions as this is a precondition for empirically testing their often-claimed relevance. We intend to make this a "growing database" by regularly adding additional datapoints.

We proceed as follows: In the next section, we briefly present our taxonomy of internal institutions. In Section 3, we discuss three issues, namely first why both the individual and the collective level are a necessary source of information to properly grasp internal institutions, second how best to delineate the groups or collectivities for which we want to provide data and third, how granular our measures of institutions ought to be. The various measures – and types of institutions they capture - included in our dataset are briefly described in Section 4. Section 5

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[2]   Economists are not the only ones who have come up with datasets covering many countries or even the entire globe. The Database of Religious History and Seshat: Global History Databank are attempts produced by scholars in neighboring disciplines. Slingerland et al. (2020) is a contribution proposing standards for attempts to code culture.

[3]   Cochard et al. (2021) only take results reported until 2014 into account.

concludes, discusses a number of questions that can be dealt with relying on the dataset introduced in this paper, and touches upon potential ways to further extend it.

2. Our Taxonomy of Institutions

Institutions can be defined as commonly known rules used to structure recurrent interaction situations that are endowed with a sanctioning mechanism (see, e.g., Voigt 2013, 2019). North (1990) distinguishes between formal and informal institutions, using the rule component as the criterion. Since North bases his distinction on the formality of the rule, we refer to the distinction as formal vs. informal rules.

In addition to distinguishing the type of rules that make up an institution, one can also distinguish who is responsible for sanctioning after a rule has been reneged upon. If the state sanctions rule-breaking, the enforcement is external to society and we propose to call the institution "external". If rule-breaking is sanctioned by members of society, we propose to call the institution "internal" (Voigt 2019). In addition, some kind of rules and standards that surround us are not sanctioned by anybody else apart from ourselves. Table 1 contains a proposal for a relatively fine-grained taxonomy of institutions that focuses on who does the sanctioning. In this paper, the focus is on the first three types of institutions.[4]

Table 1: Types of Internal versus External Institutions

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[4] Although non-compliance with type 4 institutions is not sanctioned by representatives of the state, they frequently rely on highly formalized rule systems. Identifying and measuring the relevant institutions is thus fairly straightforward and of less interest in our context.

Rule	Form of enforcement	Type of institution	Examples
1. Conventions	Self-enforcement	Internal type 1	Grammatical rules
2. Ethical rules	Self-commitment	Internal type 2	The Ten Command-ments; the categorical imperative; honesty
3. Social norms	Spontaneous informal societal enforcement	Internal type 3	Rules of social conduct; family ties
4. Formal private rules	Organized private enforcement	Internal type 4	Private arbitration courts
5. Rules of man-made law	Organized state enforcement	External	Private law; criminal law

Source: Voigt 2019

In game theory, a convention is defined as a realized equilibrium that is reached in a coordination game having two or more possible equilibria in pure strategies (Lewis 1969; Sugden 1986). This implies that no individual can make herself better off by unilateral defection; each individual has incentives to comply with the convention. The most frequently cited example of a convention are the rules of the road: If everybody drives on the right side of the road, I cannot make myself better off by driving on the left side of the road. The rules of language are another example: if my aim is to be understood by others, I better follow the pertinent rules of grammar.

Since conventions are accepted as exogenous by most individuals, a measure referring to the entire group sharing the convention is apt. This is why we include some basic grammatical rules in our database.

Type 2 institutions (i.e., ethical rules) are very different by definition as they deal with the ethical constraints that individuals impose upon themselves. But, of course, the type of restrictions an individual puts on herself will be heavily influenced by her environment: if both of my parents are traditional German philosophers, I am more likely to accept the categorical imperative as guiding my behavior than if my

father is a mafia boss. Ethical rules are best identified at the individual level, but they are likely to be affected by and co-evolving with collective features.

Social norms (i.e. type 3 institutions) are informal rules; non-compliance with them is sanctioned by members of one's group and they are, hence, both informal (with regard to the rule part) and internal (with regard to the sanctioning) institutions. They are of central interest here, as they rely on the explicit interaction of a norm-breaker and one (or more) people sanctioning the norm-breaking. It is not only of interest to identify the rules that are likely to be followed by a sanction, but also how the volunteer's dilemma (Diekmann 1985) is resolved (if it is) when more than one person observed the rule-breaking and more than one person could, hence, be involved in sanctioning. If sanctioning is assumed to be costly, then every bystander wants the rule-breaker to be sanctioned but prefers that it be done by someone else.

Type 4 institutions (i.e. explicitly agreed upon private rules) are the outcome of explicit/deliberative choices of a subgroup of society (potentially being composed of members belonging to different societies as in international arbitration). External institutions are laws and non-compliance with them is sanctioned by representatives of the state. Since the rules with regard to both type 4 internal institutions as well as with regard to external institutions are usually written down, ascertaining their meaning implies less of a challenge than with regard to the other types of institutions. This is why we do not include them in our dataset.

How does our definition of institutions relate to preferences on the one hand and behavior on the other? Some economists (e.g. Greif 2006) define institutions as equilibrium behavior. Institutions can be thought of as channeling preferences into socially accepted kinds of behavior by making some behavior more costly than others. Type 2 institutions, for example, can be thought of as preferences for complying with specific social norms (i.e. type 3 institutions). If institutions are successful in channeling behavior, then this can result in equilibrium behavior. The rules of the road are a pertinent example. As the rule part of internal institutions is often difficult to identify (Amendolagine and von Jacobi 2023), observing equilibrium behavior can be used as a clue to search for the sanction-based rule that induces such behavior.

In the case of external institutions, we are used to consider the distinction between *de jure* and *de facto*: the effects of external institutions primarily depend on their actual implementation and not on black letter law (e.g. Feld & Voigt 2003). In the case of internal institutions, however, such a neat delineation is often impossible: if

the appropriate behavior for a specific situation is nowhere comprehensively documented, the *de jure* content of institutions is hard to ascertain. With regard to social norms, injunctive norms are often distinguished from descriptive norms (see, e.g., Cialdini et al. 1990). The former can be assimilated to *de jure* ("how one ought to behave to ensure social approval"), whereas descriptive norms ("how most others behave in a given situation") capture the *de facto* nature of an internal institution. If indicators based on surveys produce values different from those based on experiments, this might be due to surveys prompting injunctive norms while experiments may be closer to descriptive ones. Observing the enforcement of internal rules is tricky, as we are likely to mostly capture *de facto* behavior for which we cannot distinguish whether it has been chosen due to the threat of being sanctioned in case of non-compliance or because the relevant rule has been internalized. What we are able to observe is merely the dispersion of behavior around a socially accepted norm.

3.   Choosing the Appropriate Unit of Observation

In this Section, we discuss three issues, namely first in which cases the individual and in which cases the collective level is a better source of information for internal institutions. We argue that the two levels are complementary and should, hence, both be taken into consideration. Second, we discuss how granular our measures of institutions ought to be, an aspect referring to the institutions themselves. Third, we discuss how best to delineate the groups or collectivities for which we want to provide data.

3.1. A Kaleidoscope for Internal Institutions: Individual and Collective Measures

Research on the importance of institutions for social and economic development has often been embedded in a broader literature focusing on the potential relevance of culture (e.g. Guiso et al. 2006, Spolaore & Wacziarg 2013, Alesina & Giuliano 2015 or Nunn 2020). To depict the relationship between institutions and culture, a definition of the latter is therefore needed. Hundreds of definitions have been proposed. We are not adding another one here but simply follow one of the many proposed definitions. Rohner (1984, 119f.) proposes to think of culture as the shared way in which individuals interpret what goes on around them and defines it as "the totality of equivalent and complementary learned meanings maintained by a human

population, or by identifiable segments of a population and transmitted from one generation to the next." Others (e.g. Moscovici 1972) have argued that social knowledge does not reside within individuals, Henrich (2016, chapter 12) even talks of our "collective brains", a way of thinking that does not require conscious deliberation but relies on cumulative experience shared by members of society (see also Haidt 2012). According to social psychology, culture can be understood as the collectively shared responses of a group to the challenges posed by the specific environment of that group. As the environment is shared by all members of the group, the cognitive processes related to culture can be viewed as collective phenomena (Amendolagine and von Jacobi 2023; Oyserman 2017). Geographical psychology has further corroborated this hypothesis, finding that values tend to cluster geographically (e.g. Chen et al. 2020; Rentfrow 2010). The collective nature of culture resides, therefore, in a common determinant (geographical conditions) and in the response to it that is consolidated by being shared (intra- and intergenerationally) by more than one person.

Culture is thus situated on the collective level but has a direct impact on individual behavior. Yet, culture needs to be transmitted from generation to generation. This needs to be done by both individuals (parents to children) and society (cohort of parents to children) – through vertical and oblique transmission, respectively (Bisin and Verdier, 2022). Although culture is generally assumed to be rather stable, cultural change has always existed. It, too, is driven by individuals who no longer comply with traditional cultural constraints, but only if a critical group size is reached (Centola et al., 2018). In sum, culture as a collective phenomenon impacts individual behavior. Simultaneously, individual behavior sustains culture but is also the driving force behind cultural change. This suggests that cultural traits may be transmitted by two independent channels – a collective and an individual one.[5]

In attempts to make different cultures comparable with each other, measures relying on the individual level as well as those relying on the collective level have been developed. In this section, we explain why we include both collective and individual indicators into our dataset.

At base, institutions are always situated at the collective level as they are to structure the behavior of multiple individuals. They can only serve their function – namely

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[5] Chen (2013) finds supporting evidence for such transmission in the case of language – a collective internal institution of type 1. Yet his findings only hold if specific levels of aggregation are considered (Roberts et al., 2015).

to reduce uncertainty – if <u>others</u> are subject to them. Ascertaining the content of external institutions is straightforward: formal legislation describes prohibited behavior and usually contains at least some hints at the size of threatened sanctions. A collective-level source of information regarding external institutions is thus the legislation passed by lawmakers.

Precisely ascertaining the content of an internal institution is more challenging. It is the defining trait of social norms that the involved rules are informal and often not written down anywhere. One way to ascertain social norms is then to observe how people behave: if in a given situation, most people do x but refrain from doing y, we may infer that x is a valid social norm for the respective situation. The behavior could either be a convention or based on an ethical rule, i.e. either be a type 1 or type 2 institution. If, moreover, we observe that at least some of the people who do choose y are sanctioned by others, we have identified an institution of type 3. In this case, the internal institution has been inferred on the basis of individuals' behavior, hence on the individual level.

We refer to a measure as "individual level" if individuals reveal their position on a specific issue as individuals. This could be the endorsement of a specific value or the claimed or effective behavior in a specified situation. The most common way of producing individual level measures are surveys. In recent years, surveys have been complemented by experiments that have the advantage that participants are all in the same precisely delineated situation.

There are many surveys collecting responses that are subsequently aggregated in order to construct collective measures.[6] The World Values Survey is probably the best known survey following such an approach. Hofstede's (e.g. 2003) well-known dimensions used to identify national cultures or House's (2004) Global Leadership and Organizational Behavior Effectiveness (GLOBE)-project are other examples.

Luckily, even with regard to internal institutions, some collective measures exist. The grammatical rules of a language (a convention or type 1-institution in our terminology) are a case in point. Ascertaining them is straightforward – although in multilingual settings, a procedure to weigh the different languages used by shares

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[6] Usually, simple means giving all respondents equal weight are calculated. Smith & Bond (2019) assume that higher status groups may have more influence on the values and norms held by society as a whole and therefore suggest to attach greater weight to members of high status groups in calculating this type of "individual based collective measure" (Bisin and Verdier, 2022 refer to *prestige-based cultural transmission*).

of a population needs to be established. Institutions with regard to all aspects of family formation and maintenance are another case in point.

Collective-level measures are likely to reflect injunctive norms because they convey expectations about desirable/accepted behavior. This is true for the rules of languages as for the behavior desired by different religions. If most people follow these rules, they convey an equilibrium outcome and descriptive norms may become congruent with injunctive ones.

Regarding individual-level measures, experiments reflect descriptive norms whereas survey responses can be thought of as individual positioning on a spectrum of possibly accepted behaviors. So if survey responses inform on the range of a distribution, it is the collective measure we derive that informs on the centrality measures such as mean, median and mode. Dispersion around such centrality measures is likely to reflect the degree to which deviation is tolerated or sanctioned. Inferences from the individual to the collective level – and vice versa - need to be taken with care as the ecological as well as the atomistic fallacy loom large.[7] While dispersion around the socially expected behavior can only be captured by relying on individual measures, the resulting distribution is an emerging collective property – that can only be seen and recognized by combination of individual behaviors. The distribution of individual behaviors is therefore a collective measure.

3.2. On the Granularity of Institutions

In principle, it appears desirable to have information on how very specific interaction situations are structured, implying that one would have hundreds or even thousands of relevant institutions that could be compared across groups. Although this may be desirable in principle, it is unfeasible from a practical point of view (see also Robinson 2013). So the question then becomes: how thematically precise should the variables optimally be?

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[7] The ecological fallacy is invoked when average values observed at the group level are simply transposed to the individuals that compose it which is a fallacy because of *within-group* inequality (Hofstede 1980; Robinson, 1950). The atomistic fallacy concept, on the other hand, implies that mere aggregation of individual-level information may not correctly represent a group-level phenomenon (Hox, 2002; Richards et al., 1990), mainly because the interconnections between the individual-level measures provide additional dimensionality and content to the group-level phenomenon.

In social psychology, broad concepts play an important role. One example is the distinction between individualism and collectivism (see, e.g., Oyserman 2017). The dichotomy is one of four dimensions introduced by Hofstede (1980) and is based on answers to 14 questions related to work goals of the surveyed employees. The measure is, by survey design, preference based. But it seems highly likely that the perpetuation of these notions relies on a number of internal institutions. Hofstede himself (ibid., 214) asserts that the degree of individualism realized in different societies is central for defining the relationship between the individual and the collectivity and that this "is intimately linked with social norms." Candidates for internal institutions determining the degree of individualism abound: institutions defining privacy, speaking up for one's rights, various institutions defining intra-family relations, institutions determining the relation between in-group vs. out-group, the degree of moral universalism and so on.

In a sense, then, individualism can be considered as being composed of a specific cluster of institutions. Our dataset allows us to determine a society's level of individualism based on cluster analysis run with institutional variables, which can then be compared with Hofstede's preference-based analysis.

3.3. On the Appropriate Unit of Analysis

Before collecting datapoints for our dataset, another question needed to be answered, namely which is the appropriate delineation of the group for which internal institutions are to be documented? Today, most available statistics focus on the nation-state level, implicitly assuming that this is the most appropriate level. There are, however, good reasons to assume that this is not always the case.

For one, very large nation states can be populated by quite diverse groups following vastly different cultural traditions. For another, many nation-state borders were not drawn in congruence with homogenous ethnic or linguistic groups. It has often been shown that high levels of ethnolinguistic fractionalization can significantly impact the development prospects of entire countries (Alesina & La Ferrara 2005; Easterly & Levine 1997). One reason for this could be that the internal institutions followed by different groups make different demands regarding individual behavior in a concrete situation and are, hence, incompatible with each other. Another could be that at least some of the internal institutions followed by some of the groups are incompatible with the external institutions, i.e. the formal legislation, of a country. Both incompatibilities raise transaction costs and make economic development more difficult.

For the provision of local public goods, rule compliance by fellow locals is often crucial. This could imply that non-compliance by fellow locals is punished more systematically than non-compliance by others. There is some evidence that this is, indeed, the case (Bernhard et al. 2006). Generally speaking, the distinction between in-group vs. out-group seems to be relevant here. Although it has been shown (Tajfel 1970) that group identification can be induced with very minor signals, it is also true that not all group memberships are equally salient and can serve equally well as a motivating force for behavior. Henrich (2016, 204), e.g., argues that civil wars are fought on the basis of ethnic or religious identities and not on the basis of other group identities such as a class, income, or ideology.

All that being said, most available indicators offer information only for the nation-state level. This implies that some aggregation rule is necessary for cases in which there are clear differences within nation states. An obvious example is a country in which different languages are spoken in different regions, or large countries in which different ecosystems (geographical determinants) coexist and may have experienced parallel evolutionary patterns. Of particular importance is the identification of possible criteria for identifying one's belonging to a group. While this can be based on language in one context, it could be ethnic or religious, or class-affiliation in another (Henrich 2016; Kinzler and Dautel 2012; Kinzler 2021). In-group versus out-group considerations result from such identification processes and can influence the way individuals interact with others, depending on whether they belong to one's group or not (Akerlof and Kranton 2010; Hahm et al. 2023; Whitt and Wilson 2007).

4. Variables Included in the Global Dataset

4.1. Criteria Used for Including Variables

This section serves to briefly describe the variables included in our dataset. The descriptions themselves can be found in subsections 4.2 through 4.4 below. Here, we briefly spell out the criteria used for including some variables but not others. There are theory-based considerations as well as pragmatic ones. Table 1 depicts an overview over all variables included.

We are particularly interested in including institutions that are conjectured to be conducive to economic development. In the introduction, we already mentioned that these are institutions enhancing impersonal exchange, enabling groups of

individuals to act collectively, and – closely related - enabling members of a group to monitor their government. [8]

Economic growth and development are facilitated if there are institutions enhancing impersonal exchange. This is the first group of institutions we aim to include in our dataset. Moreover, in many situations, individuals are better off if public goods are provided. In the absence of state action, a group's capacity to provide itself with public goods will be another important factor for the development potential of a society. We therefore also seek to include internal institutions that are conducive to the ability of a group to provide itself with public goods. Further, in any state, one crucial question is how society deals with the underlying principal-agent problem, namely how to make sure – or at least increase the likelihood – that society's agents, i.e. the representatives of the state, comply with the rules that they have been subjected to (the constitution). This can be framed as the capacity of a group to monitor its government.

These are three important functions that institutions can have for economic development, specifically. Now, some institutions can be conducive to all three functions. Think of institutions encouraging cooperation. To make cooperation sustainable, it seems further crucial to sanction those who do not cooperate or contribute their fair share. Institutions having that function are conventionally grouped under the heading "pro-social punishment" (e.g. Fehr & Schmidt 2006).

The empirical considerations guiding the choice of variables to be included in the global dataset are naturally more mundane. To ensure comparability of results across countries (or subunits), survey questions should have been formulated identically across the relevant countries and be statistically representative at the chosen level of analysis. In the case of experiments, to date most experiments have been run with student samples. If they are to be included into our dataset nevertheless, , we refrain from insisting on them being representative of the population of an entire country. However, where possible, we separately record data collected with student samples and with other population samples and, where applicable, with indigenous populations. We only include experiments that are similar in their main traits including the sampling process. If these conditions are

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[8] A slightly different criterion for the choice of informal institutions to be included in this mapping exercise could have been the likely detrimental effect of an incompatibility of informal with formal institutions. We deal with both determinants and effects of incompatibilities in a different paper (V&NvJ 2024) which is why we do not choose this focus here.

met, we include variables if they are available for at least 30 countries as that seems to be the absolute minimum for doing any econometric analysis. Often, the starting point in our search for variables that are available for at least 30 countries were surveys or meta-studies. We updated them to include studies published until 2022.[9]

This is the first exercise to map internal institutions on a global scale. To keep it tractable, we do not report results for specific decades or even single years. Instead, we simply distinguish between "contemporaneous" and "historical" data. Experiments run and surveys conducted over the last 20 or 30 years are all classified as contemporaneous but information on family- or religion-based institutions as historic. Our dataset allows the comparison between these two time periods but not time-series analysis properly speaking.

When aggregating individual level data on the level of a society, some form of averaging is usually used. But averages can be misleading as they may be the result of a unimodal distribution of survey responses, a bimodal one, a uniform one etc. This is why we are not only interested in the average answers to a given survey (or the average behavior in an experiment) but also in the variance between the different respondents (or participants in case of experiments). We propose that these be interpreted as the precision of an institution. The smaller the variance in the answers received, the more is the institution able to reduce uncertainty.

Each of the following subsections describes available data for each type of internal institution as delineated above. Within subsections, we begin with experiments (both lab and field), followed by surveys. Both surveys and experiments are individual-level measures, but their dispersions are collective-level ones. We also add collective (historical) variables where these are available.

For results from experiments to be included, they need to fulfill a number of criteria: Following Engel (2011, 586), a peer-reviewed publication is not necessary as including working papers may be a guard against publication bias. In case a particular game has been played multiple times in a single country, we calculate the mean plus the confidence interval for the upper as well as the lower bound. If there are various treatments for the same game (say the dictator game is played by males and females), each treatment is included separately. If the game has been played with non-student samples, we make note of that as we do for games played with indigenous people. Larney et al. (2019) found little effects caused by differences in

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[9]   Thöni (2019) is an overview over both the potential as well as the challenges of cross-cultural experiments.

stake size in both the Dictator and the Ultimatum Game which is why we deem it unnecessary to explicitly control for them. In citing survey and experimental data, we propose to adopt a common perspective that puts the centrality (average) of an institution and its dispersion (variance) at the center: while averages capture the expected behavior, dispersions describe their precision. The construction of each variable is described in more detail in Appendix 1 [to be added later].

Surveys such as the World Values Survey are designed to be run in a high number of countries. Their authors try to take the multiple contexts in which they will be run into account while designing them. This is typically not the case in experiments. Their main purpose is to see if differences in treatment can induce participants to behave in different ways. By comparing results of (standard) experiments run in different countries, we use them in a different way, namely to elicit differences in behavior across the different nations in which they have been played. Although we rely on standard experiments only, we rely on many different sources and contexts in which the experiments have been implemented. We therefore expect measures based on experiments to be less precise – or more noisy.

4.2. Conventions (Type 1 Institutions)

Language

Languages are highly complex instruments that allow us to transmit large chunks of knowledge from generation to generation. They are, hence, not only a substantial part of culture but also a means for transmitting it. They further allow us to create abstract realities and thereby to establish "meaningful order". Language helps individuals in societies to "place their feet solidly in mid-air" (Michael 1994). Language is a type I-institution because no speaker can make herself better off by not complying with the (implicitly agreed upon) rules that structure it. Languages can induce effects on behavior because their grammatical details enshrine differences in the way to encode time (Chen 2013), to flag differences between men and women (Givati and Troiani 2012; Hill and Mannheim 1992), between certain and possible scenarios (Kovacic et al. 2016), but also in expressing collectively shared feelings (such as '*saudade*', '*Weltschmerz*', or '*hygge*').

Language structures have been mainly used as instrumental variables for culture (Licht et al. 2007; Tabellini 2008a), but a separate literature stresses how language may directly affect cognition, adding a channel of influence to the traditional one of culture (Mavisakalyan and Weber 2018).

While Saussure (1916) and Wittgenstein (1922) already suggested that language influences thought, Chomsky (1957) and Pinker (1994) contested the so-called Linguistic Relativity Hypothesis (LRH). Recent research (Elpers et al. 2022; Mavisakalyan et al. 2018; Regier and Kay 2009; Slobin 2003;) has produced new evidence showing that language affects cognition, and thereby also behavior. It still remains unclear whether the effect occurs at the level of thought or at the moment in which thought is enacted through speaking/expressing oneself (Slobin 2003). But the recent revival of the LRH suggests that universal mechanisms of cognition concur with local linguistic conventions that rely upon other, non-universal factors (Regier and Kay, 2009).

The language we speak implicitly enacts selective attention and memory, because it puts emphasis on different aspects of reality. Language in this way affects people's perception of reality – and of their place within it (the *Sapir-Whorf Hypothesis*). We treat language and some of its features as conventions (type I institutions), without assuming a position regarding the precise channels through which its effect may unfold. Beyond representing a typology of internal institutions that can have effects on economic outcomes (Chen, 2013; Mavisakalyan and Weber, 2018), we expect language to play a role in attributing more or less weight to certain rules over others. We now present four linguistic features that have been shown to affect individual behavior – and economic outcomes.

Grammatical gender

The presence of grammatical gender seems to capture a convention according to which men are distinct from women. While this does not automatically imply discrimination, the empirical evidence suggests that in contexts in which grammatical gender characterizes local languages, men tend to be perceived as having a more legitimate access to jobs, to health and to education (Bhalotra et al., 2015; Givati and Troiano, 2012; Mavisakalyan and Weber, 2018; Santacreu-Vasut et al., 2014).

We include this language trait in our database because discrimination has far-reaching economic effects such as not exhausting the entire human potential of a society, creating labor market inefficiencies, and limiting overall innovation and creativity.

Future tense

Another linguistic trait that has been studied is the presence of a compulsory future-tense. If a language obliges its speakers to mark the future as separate from the present, this stands for a convention to displace the future farther away (Chen, 2013). Such temporal displacement has important implications for intertemporal preferences and forward-looking behavior: the future is not in continuity with the present and therefore implies higher social discount rates (Mavisakalyan et al., 2018). In other words, where language asks to mark the future explicitly, it is less real than the present, leading to reduced long-term orientation. Future time-reference (FTR) in a language can be weak (no difference between present and future) or strong, where weak FTR has been found to positively associate to saving-rates, health behaviors and retirement assets (Chen, 2013), environmentally responsible behavior (Mavisakalyan et al., 2018), and to some preferences such as patience, positive reciprocity, trust and altruism (Falk et al., 2015). In trying to establish a causal relationship of these findings, a number of experiments have been run which shed some doubts on the so-called linguistic savings hypothesis (e.g. Chen et al. 2019 or Angerer et al. 2021). Given the potentially far-reaching economic effects of this language feature, we include it into our database nevertheless.

Pronoun-use

Another convention we record among language features is the use of pronouns. In languages in which the personal pronoun "*io*" in "*io canto*" can be dropped without compromising the meaning of the sentence, language enshrines a convention according to which it is not necessary to stress one's individual role separately (in English, in contrast, this would not be possible as "*I sing*" cannot be substituted by "*sing*" without loss of meaning). For this reason, pronoun-drop in a language has been associated with more collectivist cultures (Davis and Abdurazokzoda 2016; Davis and Williamson 2016; Kashima and Kashima 1998; Licht et al. 2007; Tabellini 2008a).

Individualism has been shown to have important effects on economic as well as political development (e.g. Gorodnichenko and Roland 2011, 2017, 2021). Given that the kind of pronoun-use could be one of the root causes of individualism, we include it into our database.

Pronouns used to distinguish levels of politeness (e.g. *Du, Sie*) qualify social distance and – thereby – social hierarchies. While such distinction was present in English, too (*Thou, You*) it disappeared – by convention – leaving a pronoun use that does not make hierarchical distinctions. Current empirical evidence is much weaker on the association between politeness distinctions and egalitarianism as refusal of hierarchies (Davis and Abdurazokzoda, 2016).

Mood

Utopian thinking is another element we can detect in language conventions. To the extent that a language foresees different grammatical solutions to introduce non-indicative moods (that do not describe the world as is, but as it could be) it can influence the perception of reality of the speaker. Subjunctive moods accommodate ambiguity (Gironde et al., 2019). A greater use of such subjunctive moods associates with greater risk-aversion (Kovacic et al., 2016), possibly because the convention alerts to multiple possible states of the world, which increases uncertainty (Mavisakalyan and Weber, 2018). "Se tiver comida" – *if tomorrow there may (eventually) be food…* is a grammatical construct that stresses the uncertainty regarding the future situation. While this is a very common construct in Portuguese, it is much more difficult to verbally express such a scenario in German, or Italian, or English. As risk-aversion clearly has economic consequences, we include this language feature in our dataset.

To sum up: language features can be thought of as conventions. No individual can make herself better off by not complying with the rules of a language. The language features covered in our database have been shown to impact on discrimination, savings rates and various other behaviors related to patience, the role of the individual in society, and attitudes toward risk; all of these are highly relevant for economic development.

4.3. Ethical Rules (Type 2 Institutions)

Under type 2 institutions, i.e. self-imposed ethical rules, an individual not conforming to her own behavioral standards sanctions herself – most likely by some feelings of guilt. *Prima facie*, one could therefore expect huge variance regarding these institutions across individuals. After all, people have at least some discretion regarding their own ethical precepts - and the degree to which they feel guilty after

having broken one's own precept is also likely to vary tremendously. These considerations may, however, overestimate the degree of variance found among members of single societies.[10]

Henrich (2016, 197) argues that natural selection might have favored norm internalizers: "Such motivations may help us avoid short-term temptations, reduce cognitive or attentional loads, or more persuasively communicate our true social commitments to others."[11] And further (ibid., 199): "In short, to survive in a world governed by social rules enforced by third parties and reputations, we became norm learners with prosocial biases, norm adherers internalizing key motivations, norm-violation spotters, and reputation managers."

In his writings, Henrich has repeatedly made the point that internalized social norms are likely to reflect the prevalent local norms. In our terminology: type 2 institutions (ethical rules) are likely to reflect type 3 institutions (social norms) at least partially. Henrich et al. (2012, 659) write: "… humans readily internalize social norms, at least partially. This means norms become internalized such that norm adherence is intrinsically rewarding. Work in neuroscience has shown how both adhering to local norms and punishing norm violators activates the brain's reward circuitry."[12]

Type 2 institutions reduce decision making costs, i.e. one important dimension of transaction costs, as "internalized social norms help guide us through complex social environments, allowing people to automatically – without conscious

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[10]   Distinguishing habits from ethical rules is no mean feat as ethical rules cannot be observed directly but their presence is inferred from regularities in behavior. To qualify as a type 2 institution, non-compliance with self-imposed rules needs to lead to feelings of guilt which cannot be observed. Relying on tools from neuroscience, this may become possible on a large scale in the not-to-distant future though.

[11]   In "Passions within Reason: The Strategic Role of the Emotions", Frank (1988) makes a very similar point.

[12]   This argument is developed in more detail elsewhere. In Henrich (2016, 188f.), he writes that sanctions for norm violation and rewards for norm compliance have driven a process of self-domestication which led to a norm psychology with the following traits: "… to more effectively acquire the local norms, humans intuitively assume that the social world is rule governed"; and "when we learn norms we, at least partially, internalize them as goals in themselves… In some situations, internalizations may provide a quick and efficient heuristic that saves the cost of running the mental calculations that consider all the potential short- und long-term benefits and probabilistic penalties of action."

reflection or complex mental calculations of the reputational consequences – do the "right thing" (i.e., comply with local norms)" (Henrich, 2016:188).[13]

Fairness Norms

Widely shared fairness norms make mutual exchange more attractive. When people believe that others will act fairly, they are more willing to cooperate with each other, leading to higher levels of economic activity. Following numerous economists (e.g. Fehr and co-authors, Thaler, Eckel & Grossman), we propose to rely on the dictator game as an indicator for the fairness norms of the participants.

The dictator game is a simple one person game. The decider ("dictator") is asked to divide a pie (usually a sum of money) between herself and some other person and the experimenter then allocates the money accordingly (Forsythe et al. 1994). There is no second stage. Neither the anonymous other nor the experimenter intervene in any way implying that it is the solely ethical rules of the dictator who are decisive. Engel (2011) is a meta-study on the dictator game which analyzes 131 papers on the topic. We are adding additional results for the dictator game that were run and published between 2010 and 2022 and end up analyzing xxx results on the topic.[14]

Moral Universalism

Moral universalism is the belief that there are several moral principles that apply to all individuals regardless of ethnic or religious differences (Enke 2019). If moral universalism is widely shared, it reduces transaction costs and thereby fosters cooperation both domestically and across nation-states.

Recently, Cappelen et al. (2022) had survey respondents from 60 countries play a variant of the dictator game. In it, respondents were asked to (hypothetically) divide the equivalent of $ 1,000 between a member of their in-group and a stranger. The "stranger" was from the same country as the respondent in what the authors refer to as "domestic universalism" and from another country in "foreign universalism". We categorize the elicited degree of universal moralism as an internal institution of

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[13] The degree to which people follow norms "automatically" has even been tested in the lab. Rand et al. (2012, 2013, 2014) studied how long it took people to decide upon the size of their contribution in a Public Goods Game.

[14] Experimentalists are often challenged by questions doubting the external validity of their results. With regard to fairness norms, there is evidence that behavior in the lab does mirror behavior in the real world (Franzen & Pointner 2013).

type 2 as the respondents cannot be sanctioned by anyone for whatever division of the money they propose.

Cooperate for the Common Good

Many public goods such as roads or public education as well as a public health system, are preconditions for the efficient production of private goods. The voluntary production of public goods is considered precarious but may be important for economic development in particular in situations in which the state doesn't provide the necessary public goods. To recognize individuals' propensity to contribute to the public good, we include the public goods game into our dataset.

Public good games (PGGs) are usually played in groups of four. Each participant receives an initial endowment and then chooses how much of the endowment to put in a joint fund with the other players and how much to keep for herself. While the amounts in the private funds do not change, the amount in the joint fund is subject to a positive multiplier that is larger than one. After the multiplication, the joint fund is divided equally between all players, independently of the specific amount each player put into it. This means that it would be collectively rational that all players put their entire endowment in the joint fund. Individually, however, it is rational to keep one's endowment in the private fund but hope that others will put at least part of their endowment in the joint fund (Ledyard 1995).

If the game ends after all participants have made their decision on how to split their endowment and the experimenter has paid them accordingly, there is no sanctioning by others. This is why we interpret this simple version of the PGG as a proxy of the individuals' willingness to contribute to public goods. The contributions can be interpreted as the degree to which a group of people (a society) is capable of providing themselves with public goods.

As a starting point for our data search we relied on Chaudhuri (2011). We report the mean proportion of the original endowment that participants contribute to the joint fund. As we are interested in ethical rules, we do not take experiments with a sanctioning stage into account.

Our focus is here on the different countries in which the public goods games have been played. Here too, we are adding additional results for this game that were run and published between 2010 and 2022 and end up analyzing 24 such experiments.

Honesty

Time and again, trust has been shown to be highly correlated with both economic and political development (e.g. Knack & Zak 2003, Bjørnskov 2012). But according to our definition, trust is not an institution. If I trust someone else, this is a reflection of my expectation regarding someone else's behavior. But if most members of society are honest, then it is rational to trust others. Diffused honesty reduces transaction costs. This is why we propose to include measures of honesty into our dataset. Honesty can be interpreted as a specific ethical rule and, hence, as an institution of type 2. In case my ethics demand me to be honest but I am not, I could sanction myself with feelings of guilt.

Experimental economists have developed ways to infer into the honesty of their participants (Fischbacher & Föllmi-Heusi 2013). Usually, participants are asked to think of some number between 1 and 6 and are then shown a randomly chosen number between 1 and 6 on their monitor. In case the two numbers match, the participant gets some reward; in case they do not, there is no reward. Even experimenters cannot look into the heads of their subjects. This implies that it is impossible to know whether a participant has honestly claimed a match in a single round of the game or not. Yet, if the game is repeated many times, inferences can be made on the basis of probability theory.

Gächter & Schulz (2016) ran a multi country experiment eliciting honesty in behavior. Unfortunately, they covered only 23 countries which is why we do not rely on their results here. But Abeler et al. (2019) ran a meta-study on the preferences for truth-telling in which they relied on 90 experimental studies that were ran in 47 countries. The results reported in that paper are incorporated into our database.

Helpfulness

Societies in which people are likely to help each other profit from a number of advantages. As with regard to honesty, general trust is likely to be higher facilitating mutually beneficial cooperation. We propose to include a measure of helpfulness in the dataset that was elicited in the field – and not in the lab. The experimental variables described until now have all been elicited via lab experiments. This is different in the case of the lost wallet experiment, which takes the question to what degree people are likely to help from the lab to the field. The authors of this study (Cohn et al. 2019) visited 355 cities in 40 countries and "lost" more than 17,000

wallets. As this study was conceived of as a cross-country study from the outset, the data produced by it can be directly plugged into our global dataset.

In addition to the descriptive evidence provided by the lost wallet experiment, we also include a cross-check variable, namely how individuals estimate the likelihood that others would return one's lost wallet, as collected by LITS III (question 4.23).

Caring for Others:Observed Altruism

Helping others selflessly is one kind of altruism. Another way to behave altruistically is to donate blood. Both behaviors can be interpreted as being based on an ethical rule of those helping: they strive to be kind and helping which is why they help others by, e.g., donating blood. The overwhelming proportion of blood donations goes to persons that the donor does not know. The World Health Organization (2022) publishes a global report that contains data on unpaid voluntary donations at the country level. We include this variable to our dataset as it reflects real behavior of millions of people as recorded by official statistics.

Claiming to Help Others: Declared Altruism

Yet another way to elicit altruistic behavior is to survey people and ask if they have behaved altruistically in the past. The U.K. based Charities Aid Foundation has run its World Giving Index annually since 2009. The Index is composed of the answers to three survey questions inquiring into different aspects of altruism, namely (1) helping a stranger, (2) donating money, and (3) volunteering time. The most recent edition of the survey is available for 119 countries.[15]

Ethical rules held by individuals cannot be "observed" by others. Instead, they need to be derived from observable features such as behavior in the lab, in the field, or from claimed behavior or simply from stated convictions in surveys. Our dataset comprises variables relying on all of these elicitation methods. In psychology, the distinction between descriptive and injunctive norms has played an important role. Cialdini et al. (1990) propose to think of injunctive norms as "what most others approve or disapprove" and of descriptive norms as "what most others do." In a sense, observed behavior – no matter whether in the lab or the field – then reflects descriptive norms whereas survey answers are closer to reflect injunctive norms. It

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[15] There is, however, evidence that charitable giving is also affected by social pressure (della Vigna et al. 2012) and would, therefore, not be solely an ethical rule.

will be interesting to inquire into their correlation which will be done in the results section.

4.4. Social Norms (Type 3 Institutions)

In type 3 institutions, a rule breaker may be sanctioned by another individual or group of peers. Since the act of sanctioning is costly in some manner, it is never guaranteed to take place. To counteract that possibility, many societies have developed meta-norms that are to be applied if someone who is supposed to sanction defectors does not do so.

Sharing Norms

In section 4.3, we explained that we rely on the Dictator Game as a variable proxying fairness thought of as an ethical rule. In this section, we deal with interactions and the possibility to sanction non-rule complying behavior. This is, therefore, a social norm or a type 3 institution. The ultimatum game is such a game. It is played by a proposer and a responder. The proposer gets to propose the division of a sum of money between herself and a responder. The responder then has a choice between two options, namely to accept or reject the proposal. In case she accepts, the experimenter divides the sum accordingly, in case she rejects, neither player gets any money (Güth et al. 1982).

In this game, the proposer who is interested in securing a large share of the pie needs to anticipate whether the responder will agree to her proposal or not. In case the proposer asks for too large a share, she will be sanctioned by the responder. To be able to compare the behavior in this game with that in the Dictator Game, we also record the mean offer. In this case, it is to indicate the collectively agreed upon sharing norm.

Sanctioning norms

According to standard economic theory, voluntary contributions to the provision of public goods are unlikely to occur. And if they do, the amount of contributions will be suboptimally low. But if societies manage to establish an institution that sanctions those who do not contribute their fair share (or not at all), cooperation

may be sustainable (see, e.g. Fehr and Gächter 2002). We refer to such institutions as sanctioning norms. Since they refer to an interaction between (at least) two persons, we think of them as type 3 institutions.

By now, many experimenters have added a second stage to the public goods game already described above. The second stage gives participants the possibility to sanction the other members of the group, usually at a cost to themselves. Originally, the expectation was that others would sanction group members contributing nothing or an amount smaller than the average contribution. This has come to be known as "pro social punishment" as it can be interpreted as a prompt to contribute a fair share. Interestingly, punishment in response to cooperative behavior has also been observed and has been coined "anti-social punishment". In a study covering 16 different locations, Herrmann et al. (2008) found anti-social punishment highly prevalent in the Middle East (including Athens).

By now, the PGG with the option to punish has been played in many countries. Out of the reported results, we include three variables in our dataset: the average amount contributed under the threat of being sanctioned, the proportion of participants choosing pro-social punishment, and the proportion of participants choosing anti-social punishment.[16]

Third Party Sanctioning

Large complex societies are more likely to thrive if its members are prepared to sanction those who have treated others unfairly as this increases the cost of non-compliance with general rules and will make it, hence, less attractive. We refer to this as altruistic punishment. Compare this to societies whose members will only sanction those who have treated themselves unfairly. This might be referred to as revenge or second-party punishment. Whereas the PGG with the second stage refers to the possibility to sanction those one has previously interacted with, this variable asks which actors hitherto noninvolved are ready to sanction wrongdoers. Falk et al. (2018) contains a variable capturing these options via survey responses.

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[16] These do not add up to one as punishment is costly and participants may choose to refrain from any such punishment.

Following Enke (2019), we include a variable that depicts the ratio of altruistic over second-party punishment.[17]

Particularistic Loyalty

Loyalty can be an asset for societies if its members are loyal to its constitution, its laws, its government and so on. It can, however, also be a problem if agents are loyal to small in-groups whose behavior may be in conflict with general rules. With "particularistic loyalty" we here refer to the latter. It can, thus, lead to a conflict with external institutions. Particularistic loyalty can be based on a social norm if it is generally expected – and accepted – that loyalty to a small group ought to trump loyalty to the general rules of society. Particularistic loyalty can be thought of as an extension of 'amoral familism' (Banfield 1958) to a broader network of personal contacts.

In a sense, then, particularistic loyalty is the opposite of universal morality as discussed in Section 4.3 above. Sometimes, people face a tradeoff between either following some universal rules or being loyal to friends (but possibly breaking universal rules). Stouffer and Toby (1951, 396) wrote a story that encapsulates the tradeoff very nicely:

> You are riding in a car driven by a close friend, and he hits a pedestrian. You know he was going at least 35 miles an hourmile-an-hour speed zone. There are no other witnesses. His lawyer says that if you testify under oath that the speed was only 20 miles an hour, it may save him from serious consequences. What right has your friend to expect you to protect him?

Check one:

> ☐ My friend has a definitive right as a friend to expect me to rectify to the lower figure.
> ☐ He has some right as a friend to expect me to testify to the lower figure.
> ☐ He has no right as a friend to expect me to testify to the lower figure.

> What do you think you'd probably do in view of the obligations of a sworn witness and the obligation to your friend?

Check one:

> ☐ Testify that he was going 20 miles an hour.

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[17] It is the ratio in the answers to these two questions: "How willing are you to punish someone who treats others unfairly even if there may be costs for you?" over "How willing are you to punish someone who treats you unfairly, even if there may be costs for you?"

⊡ Not testify that he was going 20 miles an hour.

In the meantime, responses from participants in 43 countries have been recorded- They are included in our dataset as a variable proxying particularistic loyalty.

Whistle Blower Norms

Corruption is conventionally defined as the abuse of power for private gain. Corruption only works if at least two actors cooperate: the bribe giver and its recipient. By agreeing on a deal both actors indicate that they expect to be better off as a consequence. In all likelihood, the successful cooperation between these actors will be to the detriment of others, e.g. those who also bid for a contract or simply taxpayers who will eventually make up for higher government expenditures. Corruption is therefore an instance of successful cooperation between parts of society that is, however, to the detriment of others, in other words involving negative externalities. This also serves as a reminder that successful cooperation does not necessarily benefit the society as a whole.

Corruption is tricky and is likely to depend on a number of internal institutions. Rather than trying to capture any of these in our database, we are interested in norms endorsing to report instances of corruption to officials, i.e. in the possible sanctioning of such behavior. Such a norm can be interpreted as increasing the likelihood of criminal behavior being sanctioned. If it is widely accepted and followed, this reduces the expected utility from corrupt behavior which should, therefore, occur less frequently.

The World Values Survey contains a question inquiring how high the risk is to be held accountable for giving or receiving a bribe, gift or favor in return for public service. This is definitely not equivalent with such a norm, yet the likelihood to be held accountable is also determined by the existence of such a norm. The Life in Transition survey has an item more closely reflecting the norm we are having in mind. Beyond asking for the generally accepted norm, it also inquires if there is a felt obligation in case one observes an act of corruption and for readiness to incur costs to do so. In a sense, the obligation mirrors a type 2 institution whereas being ready to incur costs stands for the case in which type 3 institutions were not in favor

of whistleblowers.[18] Unfortunately, survey data are only available for 37 countries. But given that the bivariate correlation between the LiTs variable and the one contained in the World Values Survey is .7 and the WVS variable is available for xxx countries, we include the latter one into our database.

Family Institutions

What we refer to as family institutions here are sanction-based rules regulating intra-family relationships. These institutions had been highly time-invariant for centuries and we think of them as historic collective-level measures. According to Schulz et al. (2019): "… anthropological research suggests that kin-based institutions represent the most fundamental of human institutions and have long been the primary framework for organizing social life in most societies." Their fundamental character is the central reason for including them here.

With regard to marriage, Henrich et al. (2012, 659) describe these institutions in some detail: "Marriage norms govern such areas as who (i) can marry whom (e.g. exogamy, incest taboos), (ii) pays for the marriage ritual, (iii) gets the children in the event of the groom's or bride's death, and (iv) is a 'legitimate' heir and can inherit property, titles, etc. Marriage norms also specify rules about partner number and arrangement … The key to understanding marriage versus pair-bonding is recognizing the role of a community in defining, sanctioning and enforcing marriage norms." And on p. 658, they write: "Failure to conform to norms results in reputational damage, loss of status and various forms of sanctioning."[19] This is why family institutions qualify as type 3 institutions.

French anthropologist Frederic Le Play (1895) proposed that the institutions determining the relationship between father and son indicate the concept of liberty prevalent in a given society whereas the institutions determining the relationship between brothers the prevalent equality concept. The first aspect is covered by the place where newly wed couples live: do they move to their own place (neolocality)

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[18]   The exact formulation of item 8.17 is the following: "a. in our society it is generally acceptable for people to report a case of corruption they witness; b. If I would witness an act of corruption, I would feel personally obliged to report it. C. I would report a case of corruption even if I would have to spend a day in court to give evidence. D. Ordinary people can make a difference in the fight against corruption."

[19]   They cite four studies here, namely Fox (1967), Lévi-Strauss (1969), Murdock (1949), Chapais (2009).

or do they stay with the parents of either partner? The latter would indicate a low degree of freedom. In addition to the two aspects proposed by Le Play, Todd (1985) asks whether cousin marriage is allowed or even encouraged. This could also be indicative of collectivism as marrying cousins fortifies connections to near others and increases perceiving oneself as being in a relative - not absolute - position with respect to others.

The different family types resulting from combining these three traits are depicted in Table 2. Recent research (Gutmann & Voigt 2021) has tested many of the hypotheses proposed by Todd and finds a number of noteworthy effects. The communitarian family type (and in particular its endogamous version) is associated with more racist attitudes, higher state fragility, and a lower degree of civil society. All of these are important effects which is why we include family types as a variable in our dataset.

Table 2: Schematic representation of family types

		Liberty		
		Low: married son stays with parents		High: married son moves out
Equality	Low: unequal treatment of brothers	Authoritarian (e.g., Norway, Sweden, Germany, Ireland)		Absolute nuclear (e.g., England, Canada, US)
	High: equal treatment of brothers	Endogamous community (e.g., Pakistan, Morocco)	Exogamous community (e.g., Russia, Mongolia, China)	Egalitarian nuclear (e.g., Spain, Italy, Poland)

Source: Gutmann & Voigt (2021)

The Ethnographic Atlas (Murdock 1967) contains variables on these aspects. It has a wide coverage with regard to Africa but is weak for Europe. Rijpma and Carmichael (2016) have merged data from the EA with data from Todd to increase country coverage. It is their data we report here.

In addition: Trust

Throughout this paper, we have mentioned multiple times that trust is not an institution. Yet trust – and trustworthiness – are closely associated with some of the institutions described in this paper. This is most obviously the case with regard to cooperation both bilaterally (as in business exchange) and multilaterally (as in the provision of public goods including the public good opposition). We include both

survey and experimental trust measures: next to the general trust question of the World Values Survey, we include a "radius of trust" measure that informs whether trust in others is confined to one's in-group (family, neighborhood, people you know personally) or extends to one's out-group (people you meet for the first time, of another religion, of another nationality). This measure was first proposed in Delhey et al. (2011).

The trust game as proposed by Berg, Dickhaut and McCabe (1995) has become the standard in eliciting trust and trustworthiness in the lab. Johnson and Mislin (2011) is a meta-analysis including experiments conducted across 35 countries. Their analyses includes papers available until around 2010. By extending the coverage until 2022, we are able to increase country coverage to 50 countries.

5. First Insights Derived from the New Global Dataset

The primary purpose of this paper is to serve as a database for scholars interested in empirically ascertaining the relevance of internal institutions. We believe that it can help to improve our knowledge regarding origins, interplay and effects of internal institutions simply because it offers considerably more detail than such rather coarse measures as individualism vs. collectivism. This section serves to highlight a small number of analyses that could be carried out relying on the database here proposed. Before highlighting some possibilities, we briefly return to the dispersion of our variables already mentioned above.

It seems straightforward to use the means of the variables as representing the relevant unit of analysis. This is why we flag an additional use, namely the dispersion that is behind the respective mean. We assume that low dispersion signals a high uniformity regarding social norms. Low dispersion could also indicate tightness of both the rules and the sanctioning of non-compliance with them (see, e.g., Gelfand et al. xxx). Recently, a number of papers have proposed various ways to measure diversity (e.g. Beugelsdijk et al. 2017 and Dimant 2023). APPLY HERE?!

This paper focuses on three types of internal institutions, namely conventions, ethical rules, and social norms. At least four types of analyses seem straightforward: (1) the congruence of institutions within the three types, (2) the congruence of institutions across types, (3) the congruence of internal institutions with external institutions, i.e. state mandated law, and (4) the effects of internal institutions on economic and political development. In the next paragraphs, we focus on (1) and

(2). As conventional in economics, we consider bivariate correlations of 5% or better as significant.

(1) Analyzing single institutions that have been elicited relying on multiple methods could shed additional light on institutional details: if systematic differences are observed between data elicited via surveys and those elicited via experiments, this may teach us something about differences between injunctive versus descriptive norms.

(2) – Possibilities: mention the very high correlation between grammatical gender and mood within type 1. Check for pronoun drop*individualism.

(3) – One could assume that fairness is correlated with a number of other proxies such as altruism, moral universalism, cooperation, helping others and honesty. Relying on the Dictator Game as a proxy for fairness, we only find a significant correlation with honesty (as elicited in lab experiments) but no significant correlation with the other concepts mentioned….[one or two sentences interpreting this result?! E.g. pointing out that these really seem to depict different dimensions?]

(4) – The correlation between citizens returning a lost wallet and the expectation that a lost wallet would be returned is also of interest: it informs us to what degree citizens are able to form correct expectations about the behavior of their fellow citizens. Since we do not find a significant correlation between the two, we infer that people are not able to form correct expectations.[20]

- It is also interesting to look at the correlation between observed altruism (as proxied by the percentage of people who voluntarily donate blood) and the share of survey respondents who claim to have helped someone else recently either by helping a stranger of having donated time or money. The respective bivariate correlations are all insignificant possibly adding another empirical example for what has been discussed as self-deception for many years [REFS].

- With regard to type 3 institutions, the Ultimatum Game proxies for the willingness to share (under the threat of being sanction) whereas the PGG with a sanctioning stage proxies for the willingness to team up with others to become productive. Here too, we expected a positive association. However, the two are not significantly correlated. A possible reason may be that the UG depicts a bilateral relationship whereas the PGG depicts a

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[20] But note that data from both datasets are only available for 9 countries.

      multilateral one. The likelihood of being a sucker or being subject to hold up is higher under the multilateral setting.

As of today, data on family types are the only proxies for historically prevalent institutions in our dataset. Correlating them with some contemporaneous institutions can therefore teach us something on their time-invariance as well as their long-term consequences. It turns out that the endogamous communitarian family type is highly correlated with some contemporaneous variables focus on discrimination: the data show that women living in countries that have been categorized as endogamous communitarian (1) do not have the same rights over divorce as men, (2) do not enjoy the same inheritance rights as widowers and sons, and (3) are significantly less likely to have an account at a financial institution (correlation coefficients are 0.53, 0.62, and -0.57 respectively).

(5) It seems highly likely that the three types of internal institutions have co-evolved and tend to re-enforce each other. If various language traits can be traced back to geographical origins just as social norms can, they are likely to be aligned. Above, we cited evidence, according to which internalized ethical rules are likely to incorporate the social norms prevalent in a specific society.

Yet, it would be nice to see some empirical evidence supporting these conjectures. A first impression to what degree this is the case can be had by the bivariate correlation between the dictator game (a type 2 institution) and the ultimatum game (a type 3 institution).

Both the dictator and the ultimatum game are about the sharing of some pie. We suggest to analyze the differences in the offers made in the two games: the offer made in the dictator game can be attributed to internalized ethical rules whereas the proposer in the UG is likely to take the anticipated reaction of the responder into account when making her offer. We assume the mean offer to be higher in the UG. The difference between the two offers would then give us an information on the effect of (anticipated) sanctions by others. Cochard et al. 2021 actually realized this already for 29 countries based on studies published until 2014. We updated their approach and thereby increased the number of included countries to 48.

We find that subjects in poorer countries are making slightly higher offers in the DG than participants in richer countries. The inverse is true regarding the UG: there, mean offers increase in income. Subtracting the mean offer of the UG from that of the DG then leads to very small differences in poorer countries and increasing differences in rising income. These findings seem to imply that

fairness norms are internalized to a larger degree in poorer countries and, correspondingly, that the threat of being sanctioned in case of a low offer is more prevalent in richer countries.

Figure 1 around here[21]

The differences in mean contributions offered in public good games can be analyzed in a similar fashion. The offers made in the single stage PGG reflect the ethical rules of the participants whereas the offers made in the two-stage PGG reflect the (anticipated) effect of being sanctioned by others in case of non-compliance with the norm. The results are comparable with those just reported on the DG and the UG: if the public goods game is played without punishment, offers in poorer countries are slightly higher than in richer ones. As soon as the punishment stage is added, the picture reverses. Offers in richer countries are now significantly higher than in poorer ones. These are correlations and no causation can be inferred from them. If we assume that the propensity of contributing to public goods is time-invariant, a plausible interpretation of the relationship could be that countries in which the threat of a sanction is perceived as real have an advantage in economic development.

Figure 2 around here

(6) The persistence of institutions has been claimed by many (e.g. Fukuyama, Huntington, Platteau) and challenged by others (adherents to modernization theories such as Weber or Inglehart & Welzel). Since the mapping dataset also contains a number of historically prevalent informal institutions (namely those referring to various aspects of family organization), it can also be used to add something to that debate.
[add info: you wanted to know some details re the lost wallet experiments. Here are two things: (1) the recipients of the lost wallets were only popular male

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[21] The figure only contains incentivized games. To have a higher number of observations, we also analyzed hypothetical and incentivized games together. The standard errors are almost the same (2.34 in the incentivized vs. 2.37 in both incentivized and hypothetical games).

names. (2) women are 2 percentage points more likely to return wallets; but I still do not have a clue re all the neg correlations with the OECD variables]

(7) External institutions, i.e. formal laws, are unlikely to have the intended effects when they are only partially implemented – or not at all. This is referred to as a *de jure/de facto*-gap. One reason for the existence of such a gap could be the incompatibility between external and internal institutions. One example for such a gap could be the formal prohibition of child marriage which may still be consummated as long as the practice is backed up by respective social norms.

(8) For at least a decade, economists have been interested in the "deep" or long-term determinants of economic development …

The correlation matrix included below allows us to get a first handle on these issues. We have up to two dozen data points per country and a cluster analysis could reveal typical combinations between different kinds of institutions. In addition, a correlation network analysis could reveal additional information regarding, e.g., the centrality of specific internal institutions within conglomerates of norms that - because they are interlinked - constitute an institutional landscape.

6. Conclusions and Outlook

To our knowledge, the database on internal institutions presented in this paper is the most encompassing to date. We hope that even more data will become available in the future both with regard to missing data points in our database and with regard to variables proxying for additional internal institutions. Examples for institutions for which data are highly desirable include those that deal with the citizen-authority relationship but also those that support the use of anti-social punishment (as described in Herrmann et al. (2008).

In Section 5, we offered a number of examples for unexpected non-correlations, pointing to some potential incompatibilities between institutions drawing on our database. An additional future step would be to inquire into the factors driving institutional change, i.e. to inquire into those factors that reduce or increase incompatibilities. An ad hoc conjecture is that incompatibilities between institutions will be one factor inducing change as tensions between norms create windows of opportunity for institutional bypass or behavioral innovation. Another ad hoc conjecture is that change in institutions is particularly likely when we

observe lots of variation around the norm as this implies either imprecision or "looseness" in the current interpretation of a social norm by their users.

In Section X above, first steps towards institutions as components of institutional systems were taken. To do so, we simply relied on very strong correlations between single components on the one hand and insignificant ones on the other. Future studies could rely on more elaborate tools such as XXX. The insights gained by analyzing entire systems of institutions are likely to be policy relevant: if institutions have a firm place in a whole system of institutions, attempts to change single ones without taking the entire systemic context into account could either fail outright or have unintended side effects on "neighboring" institutions.

While different institutions have already been identified as contributing to economic development, there may be different ways through which this happens. We stress that differences in internal institutions do not necessarily imply chronic disadvantages, as societal innovations and new co-evolutionary patterns kicked off by them can produce qualitatively different pathways towards similar results (Duit and Galaz, 2008).

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		N (total)	N (out of EU memberstates)	N(out of candidate states)
Type 1	Various language traits			
Type 2	Fairness (DG)			
	Moral Universalism (modified DG)			
	Cooperation (PGG)			
	Honesty (lab)			
	Honesty (field; lost wallet)			
	Altruism 1: blood donation			
	Altruism 2: Charity Giving			
Type 3	Sharing Norms (UG)			
	Sanctioning (non-)cooperation (2 stage PGG)			
	Res Publica Orientation (3rd vs. 2nd person punishment)			
	Particularistic Loyalty			
	Reporting Corruption			
	Various Family Institutions (residence, cohabitation, cousin marriage, inheritance)			
Other	Trust (both level and radius)			