

University of Groningen

## Institutions and Functions

Guala, Francesco; Hindriks, Frank

*Published in:*  
Institutions in Action

*DOI:*  
[10.1007/978-3-030-32618-0\\_2](https://doi.org/10.1007/978-3-030-32618-0_2)

**IMPORTANT NOTE: You are advised to consult the publisher's version (publisher's PDF) if you wish to cite from it. Please check the document version below.**

*Document Version*  
Publisher's PDF, also known as Version of record

*Publication date:*  
2020

[Link to publication in University of Groningen/UMCG research database](#)

*Citation for published version (APA):*

Guala, F., & Hindriks, F. (2020). Institutions and Functions. In T. Andina, & P. Bojanic (Eds.), *Institutions in Action: The Nature and the Role of Institutions in the Real World* (pp. 9-19). (Studies in the Philosophy of Sociality). Springer. [https://doi.org/10.1007/978-3-030-32618-0\\_2](https://doi.org/10.1007/978-3-030-32618-0_2)

### Copyright

Other than for strictly personal use, it is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), unless the work is under an open content license (like Creative Commons).

The publication may also be distributed here under the terms of Article 25fa of the Dutch Copyright Act, indicated by the "Taverne" license. More information can be found on the University of Groningen website: <https://www.rug.nl/library/open-access/self-archiving-pure/taverne-amendment>.

### Take-down policy

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

*Downloaded from the University of Groningen/UMCG research database (Pure): <http://www.rug.nl/research/portal>. For technical reasons the number of authors shown on this cover page is limited to 10 maximum.*

# Chapter 2

## Institutions and Functions



Francesco Guala and Frank Hindriks

**Abstract** What is an institution? And what distinguishes one type of institution from another? We answer these questions using a functionalist approach: types of institutions are identified by their function, or the coordination problems they solve; token institutions are specific solutions to these problems, or equilibria of strategic games. The functionalist approach provides some insights into the limits of reform, or the extent to which institutions – like marriage, property, or democracy – can be modified without turning them into entities of a different kind.

**Keywords** Institutions · Functions · Equilibria · Reform

### 2.1 Introduction

Institutions are familiar and ubiquitous. The computer Francesco is using right now has been produced by an American corporation, that is, by an institution. Frank's office is in a building owned by the University of Groningen, another institution. As we are writing this paper we occupy institutional roles – we are two professors of philosophy and economics. Unsurprisingly, given their importance, the nature and functioning of institutions has been the object of intense debate both by philosophers and by social scientists. What is an institution? What distinguishes one type of institution from another? What makes the University of Groningen a university, for example, and not a corporation? What makes us professors, rather than, say, managers or priests?

Answering these questions requires, in philosophical jargon, the specification of identity criteria. Providing such criteria however is not just a metaphysical problem – it also has practical and political implications. One such implication, for

---

F. Guala (✉)  
University of Milan, Milan, Italy  
e-mail: [francesco.guala@unimi.it](mailto:francesco.guala@unimi.it)

F. Hindriks  
University of Groningen, Groningen, The Netherlands

instance, concerns the issue of *change*. How malleable are institutions? How much can an institution change, before it becomes something else? For a concrete example, consider the debate concerning the nature of marriage. In many countries, the extension of marriage contracts to homosexual couples has ignited vehement reactions. Conservatives have claimed that such reforms would affect profoundly the nature of the institution, to such an extent that the new contract should not be called “marriage” anymore. In typical provocative (and ungrammatical) style, a politician of the Italian party *Lega Nord* has recently declared, for example, that

Since with the gay issue they put all sorts of things together, everything and its opposite, I will celebrate unions for dogs, cats, for everyone. Gay people can come to register, but then let everybody else do it!<sup>1</sup>

Or consider – for the sake of political equanimity – the reactions of several liberal politicians and intellectuals to the constitutional reforms proposed by the Turkish prime minister, Recep Tayyip Erdoğan. According to two scholars,

Erdoğan’s aim is to transform the country into a majoritarian authoritarian system centred on one man. What Turks are risking is nothing less than “democide” – the scholarly term for voting to abolish democracy itself (Watmough and Ozturk 2017).

Are these merely exaggerated reactions driven by political passion? Or is something more serious going on? Is marriage really going to become a different institution, if the right to marry is extended to gay and lesbian people? Has Turkey become a non-democratic country, after Erdoğan’s reforms were narrowly approved in the referendum?

In this paper we will argue that these questions are symptoms of a deeper philosophical issue. We will call it “Caligula’s Problem”, in honour of the infamous Roman emperor. According to the historian Suetonius, Caligula appointed his horse, Incitatus, a priest and promised to make him a consul. Now, most people would agree that a horse cannot possibly be a priest or a consul. By appointing Incitatus, in fact, Caligula intended to humiliate the clergy and the senate, and eventually to destroy these institutions.

Caligula’s horse is a historical curiosity, but at the same time suggests that the arguments against gay marriage and constitutional reforms cannot be dismissed too easily: there seem to be limits to institutional change after all. But what are they? Surely institutions are not completely static entities. They can evolve, to some extent, while retaining their identity. So, to what extent are we entitled to reform or re-design a given institution, without turning it into an entity of a completely different kind?

Unfortunately, we cannot answer these questions unless we have at least a rough idea of what an institution is. In the next section therefore we will briefly outline a theory – the theory of *institutions as rules-in-equilibrium* – that tries to overcome the limitations of other existing accounts (Guala and Hindriks 2015; Hindriks and Guala 2015; Guala 2016). Then in Sect. 2.3 we will illustrate the relationship between institutions and functions. Section 2.4 is devoted to the important distinction

---

<sup>1</sup>Gianluca Buonanno, radio interview on Radio 24, 27 October 2014.

between tokens and types of institutions, and explains how the theory of kinds as property clusters can be adapted to the case of institutions. Section 2.5 concludes with some remarks on the politics of institutional reform.

## 2.2 A (Very Short) Theory of Institutions

Existing approaches to the study of institutions can be divided in two broad categories: those that define institutions as systems of rules, on the one hand, and those that see them as equilibria of strategic games on the other. The *rules account* is close to our vernacular, pre-scientific understanding of institutions. Just like rules, institutions regulate behavior. They indicate certain actions as appropriate or mandatory in specific circumstances.<sup>2</sup> The institution of private property, for example, regulates the use of resources by indicating who has access to them. The institution of money regulates the use of paper certificates in economic transactions. And the institution of marriage regulates the behaviour of two or more individuals who pool their resources to raise children, manage property, and help each other in various ways.

But if institutions are rules, who makes the rules, and how do they regulate behaviour? Stating a rule is clearly insufficient to bring about an institution. To see why, just consider that there are plenty of ineffective rules: rules that are officially or formally in existence but that are nevertheless ignored by the majority of people.<sup>3</sup> Traffic lights in Milan are regulations, in Rome they are suggestions, and in Naples they are just decoration, as the saying goes. But since the rules are formally the same in Milan, Naples, and Rome, there must be something else going on. There must be some special ingredient that makes people follow the rules in some circumstances and ignore them in others.

*Equilibria accounts* of institutions tell us what the special ingredient is: effective institutions are backed up by a system of incentives that motivate people to follow the rules (e.g. Lewis 1969; Schotter 1981; Sugden 1986; Calvert 1998; Aoki 2001; Binmore 2010; Bicchieri 2006; Hédoïn 2017). An equilibrium in game theory is a profile of actions or strategies, one for each individual participating in a strategic interaction. Each action may be described by a simple sentence of the form “do X” or “do Y”. The defining characteristic of an equilibrium – which distinguishes it from other profiles – is that each action must be a best response to the actions of the other players or, in other words, that no player can do better by changing her strategy unilaterally. If the others do their part in the equilibrium, no player has an incentive to deviate.

---

<sup>2</sup>The idea of institutions as “rules of the game” (Spielregeln) is already in Weber (1910: 459). (On institutions as rules see also Parsons 1935; North 1990; Knight 1992; Mantzavinos 2001; Hodgson 2006.)

<sup>3</sup>To be clear: we are not referring to ‘dormant’ institutions here, but to rules that are systematically disregarded or violated.

**Fig. 2.1** The traffic light game

	Go	Stop	Stop if red, go if green
Go	0	3, 2	3/2, 1
Stop	2, 3	1, 1	3/2, 2
Stop if red, go if green	1, 3/2	2, 3/2	5/2, 5/2

Since the actions of a strategic game can be formulated as rules (“do X”, “do Y”), equilibrium-based and rules-based accounts of institutions are mutually compatible. From the point of view of an external observer, an institution takes the form of a behavioural regularity that corresponds to the equilibrium of a coordination game. But each equilibrium strategy also takes the form of a rule that dictates each player what to do in the given circumstances. To sum up: the equilibrium requirement is important because rules by themselves lack the power to influence behaviour. But together with the right system of incentives, rules can function as signals that coordinate the behaviour of large groups of individuals. Institutions, in a nutshell, are *rules in equilibrium* – rules that people are motivated to follow.<sup>4</sup>

To illustrate, let us take a simple problem of traffic regulation. Suppose that two drivers, Ann and Bob, meet very often at a crossroad. In the absence of a traffic light, there are three obvious strategies that they could follow: Ann stops and Bob goes; Ann goes and Bob stops; they both toss a coin and stop or go with 50% probability. The first two solutions however are unfair: unless one of them has a special claim, why should he or she *always* be privileged? The third solution is more acceptable from this point of view, because the payoffs are symmetric, but unfortunately is inefficient: half of the time, Ann and Bob will have an accident.

There is, of course, another solution: introducing a traffic light. If Ann and Bob play the conditional strategy ‘Stop if red, go if green’, they will obtain an equilibrium that is efficient and fair, because it ensures that neither of them will be penalized in the long run. One way to represent the new equilibrium is by means of a payoff matrix like the one depicted in Fig. 2.1. The shaded area represents the original situation faced by the two drivers. The cells that correspond to ‘Stop, Go’ and ‘Go, Stop’ are the unfair equilibria of the original game (with payoffs [2, 3] and [3, 2]). Although the third equilibrium is not represented explicitly, it can be obtained by randomizing behaviour over the strategies ‘Stop’ and ‘Go’. The *traffic light equilibrium*, finally, lies at the intersection between the new conditional strategies ‘Stop if red, go if green’ (in the bottom-right corner). If there is 50% probability that the light is green (or red) every time Ann and Bob approach the intersection, then the payoffs are those represented in the cell of the matrix that lies in the bottom-right corner [5/2, 5/2].

<sup>4</sup>Aoki (2007), Greif and Kingston (2011), Guala and Hindriks (2015), Hindriks and Guala (2015), Guala (2016) propose to view institutions as “rules in equilibrium”. On the role of incentives, see also Smit et al. (2014).

## 2.3 Institutions and Functions

This analysis may seem unnecessarily complicated, but serves an important purpose. Using the idea of institutions as rules in equilibrium, in fact, we can explicate the important relationship that holds between institutions and *functions*. This in turn will shed light on the stability of institutions, and the extent to which they can retain their identity when they change – the main topic of this paper.

Because they solve problems of coordination and cooperation like the one discussed above, institutions have a function: the function of helping people to find an arrangement that is mutually beneficial. Looking at the game matrix in Fig. 2.1, for example, we can see that using the traffic light the players can avoid the inefficient outcomes (Go, Go) and (Stop, Stop). So, the traffic light and the rules of traffic contribute to the well-functioning of society and to the well-being of its members, by facilitating the smooth flow of cars. This does not mean that the traffic light equilibrium is the only possible solution, of course, or the best one for all players: the Row player would prefer (Go, Stop) for example, and the Column player would prefer (Stop, Go). But it is a solution, with peculiar characteristics (like payoff symmetry or fairness) that other solutions do not have.

Now, depending on the specific coordination problem they help solve – or their specific function – we can classify institutions into separate classes or kinds. For example: all institutions that make the interaction with other drivers safer and more efficient belong to the class of traffic rules institutions. The advantage of functional definitions is that they abstract away from the innumerable ways in which the same goal (traffic regulation in this case) may be achieved in different contexts. For this reason, functions are used not only by social scientists, but also by biologists when they theorize about physiological traits. An eye, for example, is an organ that perceives and represents the environment through the detection of light. Eyes come in different guises, as each token eye (the eye of a wasp or the eye of a mammal) exploits different light-detection mechanisms. Nevertheless, there are general theoretical principles that hold for eyes across the species. And similarly, in our case, there are interesting generalizations that apply to different traffic rules, property regimes, or marriages, regardless of the specific ways in which each token institution works.

## 2.4 Tokens, Types, and Clusters of Functions

The fact that institutions can be classified according to their functions points us in a promising direction. Some arguments against the reform of cherished institutions are probably based on the conflation of a historically given form of organization with the general kind it belongs to. To disambiguate we shall introduce a simple distinction that most philosophers are familiar with: the distinction between *tokens*

and *types*.<sup>5</sup> Tokens are particular entities located in space-time. For example: Francesco's laptop is a token with certain unique characteristics (its serial number, for example, and a little scratch on its keyboard), with a specific history (it came into being sometimes in 2013) and location (it is usually in Milan, although it has travelled widely across Europe). Nonetheless, it is not totally unlike other laptop computers. It is a computer of a certain kind (a MacBook Air), with characteristics shared with other similar machines. A MacBook Air is a type of computer, and as such it is not spatio-temporally restricted in the same way. In a sense, it has many locations – as many as its instantiations.

Now, the type-token distinction can be applied to social entities as well. Money and marriage, for example, can become instantiated in innumerable ways. They are institution-types. Marriage as currently codified in Dutch law in contrast is a specific form of marriage, characteristic of a particular society during a particular period of time. Similarly, the Euro is a particular instantiation of money, characteristic of a specific time and place. The Euro and marriage-as-codified-in-Dutch-law have a beginning, a geographical location, and inevitably will come to an end.

Within the rules-in-equilibrium framework, a token institution is a particular way of solving a certain kind of problem or set of problems. It is characterised by specific rules and coordination devices, such as the traffic light that we have discussed in the previous sections. Institution-types instead can take different forms, in the guise of different rules and different coordination devices. Institution-types are identified by their functions: an institution of type T is any set of rules in equilibrium that does X, Y and Z. The rules of traffic for example are any set of rules that regulate drivers' behavior to make transportation safer and more efficient. These goals can be achieved in different ways, e.g. via different coordination devices and different rules. But what unifies the various (token) institutions is their function: what the rules and coordination devices help accomplish.

Marriage (as a type) is an institution that solves a cluster of related problems, including procreation, maintenance, education, and the socialization of kids; mutual economic help, inheritance; and affective support. 'Our' institution of marriage – marriage as currently codified in the Dutch or the Italian law, say – is one way of solving these problems. But there are many other alternatives: family arrangements can be monogamous and polygamous, poligenous and polyandrous, exogamous and endogamous, matrilineal and patrilineal, matrilocal, patrilocal, bilocal and neolocal, polyamorous, consanguinal, affinal, affiliative and fictive (the list could be longer). Each of these arrangements is regulated in different ways, and gives rise to different equilibria in the coordination problems that marriage contracts are supposed to solve.

Figure 2.2 tries to represent the type-token distinction visually, within the framework of the rules-in-equilibrium account. Each token institution within the dotted area regulates a set of games, or solves a set of related coordination problems. The

---

<sup>5</sup>The same point can be cashed out in terms of particulars and universals, individuals and classes, or similar notions. There are subtle differences between these concepts that, however, do not matter for our purposes (but see Epstein 2016, and Hauswald 2018, for a discussion).

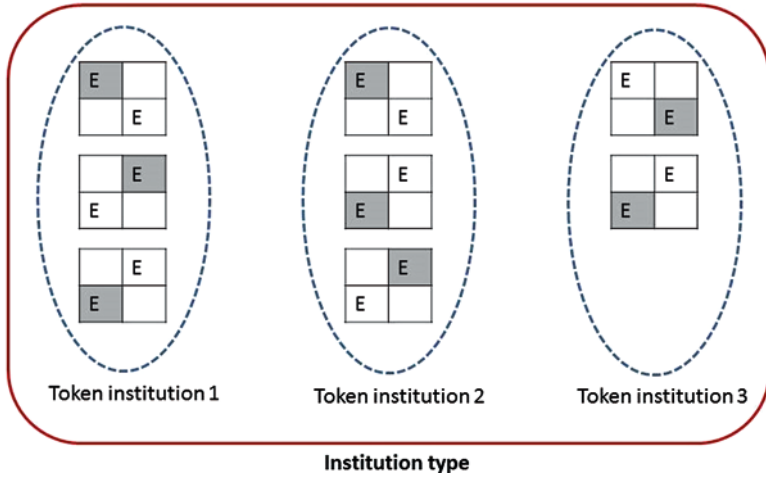


Fig. 2.2 Institution types and tokens

problems (games) within each dotted area are related and therefore tend to be regulated jointly, in ‘clusters’. Marriage rules for example typically solve problems of cooperation, sexual access, procreation, inheritance (etc.) simultaneously. Each of these coordination problems however has several possible equilibria (represented by E in the cells of the various games). The shaded cells represent the profiles of actions (equilibria) that are prescribed by each token institution. So in this case, for example, we could have three different kinds of institutions that solve the games in the cluster, each in a different way. But they would all be token instances of the same type of institution: the institution of marriage, say.

Notice that the token institution depicted on the far right of Fig. 2.2 solves only two problems out of three. This is meant to illustrate the fact that membership in a type is relatively flexible, and to emancipate the functionalist approach from the idea that a ‘true’ institution of type T (a ‘true’ marriage, for example) must be able to fulfill some essential function (like procreation, say). At the same time, however, the theory should not allow *too much* flexibility. We do not want to end up saying that *anything* counts as a marriage contract. We cannot solve Caligula’ problem unless we place some restrictions on the sort of functions that an institution must fulfill in order to belong to the type in question.

One way to do it is by noticing that the functions of institutions tend to come in packages. For example: the functions of money (the type) tend to be correlated in interesting ways. Being a store of value is a precondition for being used as a medium of exchange, for the trivial reason that trading takes place over time: if the value of a currency decays too quickly, then that currency cannot solve the problem of coincidence of wants.<sup>6</sup> Or, to take another example: investment in kids’ welfare and

<sup>6</sup>There is a problem of coincidence of wants when Ann wants to trade fruit for vegetables, Bob wants to trade vegetables for meat, and Carol wants to trade meat for fruit. Currencies solve problems of this kind by working as media of exchange.



education is costly, so it is not a mere coincidence that most marriage contracts regulate both child-rearing and financial support. The functions are correlated because marriage institutions solve a cluster of problems that are objectively related to one another.

One way to develop this idea is to follow the tradition of ‘real kinds’ pioneered in the nineteenth century by John Stuart Mill, John Venn and William Whewell, and updated recently by Richard Boyd. The kinds identified by (our best) scientific theories are *clusters* of properties held together by ‘homeostatic’ causal mechanisms.<sup>7</sup> Because the properties tend to be co-instantiated, real kinds support inductive inference. For example, the rules of traffic can be used to predict drivers’ behavior. But the existence of a specific rule can also be used to predict the existence of other rules that are likely to be part of the cluster: if there is a rule that prescribes driving on the right, for example, there is also probably going to be a rule that prohibits overtaking on the right.

These inferences are useful for pragmatic purposes, but can also be used to test theoretical hypotheses and to find out about the way the world is structured. The properties of natural and social kinds can be investigated scientifically, in other words. The main difference is that, in the case of institutional kinds, the relevant properties are *functional*.

## 2.5 Institutional Change and Reform

We are now ready to solve Caligula’s problem: how far can a (token) institution change before it becomes something else – an institution of a different kind? If we identified the institution-type (marriage, say) with a set of specific rules, rather than with their functions, we would be led into mistake. We would be led into thinking for example that changing the rules even slightly would make the contract that binds and regulates the behaviour of two partners a completely different kind of institution. Gay unions, according to this reasoning, would not be marriages.

But French ‘PACS’ (*Pacte Civile de Solidarité*) and Italian ‘*Unioni Civili*’ are contracts of the same kind as ordinary marriage contracts. They belong to the broad category of institutional devices that different societies use to regulate the behaviour of people engaged in complicated life-projects that require extensive coordination and cooperation. As a society, we are entitled to explore new ways to regulate behaviour, when we feel that current rules are not good enough for our purposes. Nonetheless, the functionalist approach has the advantage of reminding us that the identity of any entity is robust to a limited range of manipulations only, and that there are changes to an institution that would turn it into something else. Just as the

---

<sup>7</sup>A mechanism is ‘homeostatic’ if it has the tendency to bring a system back to its equilibrium state when there is a small perturbation. The idea is that the entities that possess the standard properties of the cluster tend to persist and to proliferate, while those that lack some properties tend to acquire the missing property or disappear. See e.g. Boyd (1991).

term “senator” cannot be stretched so far as to include the appointment of Caligula’s horse, so there are arrangements that cannot be legitimately called “marriage”, regardless of what we want the latter to be.

But how much change can an institution survive? We have argued that a type of institution can be identified in terms of a cluster of problems. A token institution consists of a set of rules that solve those problems in a particular context. This leaves considerable flexibility concerning who can be a member of an institution. The institution of money is not affected by the introduction of new currencies, which rely on different rules and perhaps even different kinds of objects. Similarly, a new institution of marriage could be open to a wider set of citizens than the traditional pool of heterosexual people. Admittedly, this would change the rules of the game. However, as long as the underlying cluster of problems that they solve is similar enough, the new institution is a token of marriage. Membership is somewhat flexible, because (token) institutions are made of rules, not people. Their identity can remain the same even if the members of the relevant group are replaced at once. (That’s why institutions are immune from mereological puzzles like the ship of Theseus – see Hindriks 2012.) And even rules are subject to change, because (type) institutions are constituted by problems, not rules.

Institutions are vulnerable to certain kinds of reform for a different reason. If institution-kinds are identified by the functions they fulfil, then a reform that affects the functions may affect the identity of the institution as well. An equine senate, for example, would probably be unable to fulfil a number of functions that democratic assemblies typically fulfil. Similarly, one might challenge the claim that gay marriage is a form of marriage on the grounds that it is unable to perform enough of the functions that marriage contracts typically fulfil.

Addressing arguments of this kind would require another – much longer – essay. It would require a deep study of the functions of marriage, and of the ways in which such functions are served by different systems of rules. Such a study would probably reveal that the identification of sharp boundaries is rather difficult. Since the boundaries of clusters are fuzzy (Boyd 2000), the adjudication of borderline cases must be informed by comparisons of explanatory power and inductive potential. If the inclusion of Caligula’s equine senate in the class of democratic assemblies led to significant explanatory loss (without corresponding inferential gain), then there would be good reasons to exclude it from the institutional kind *senate*. Similarly, we should evaluate whether including gay unions in the institution of marriage would lead to significant explanatory and predictive losses, in order to adjudicate the issue of “gay marriage”.<sup>8</sup>

The important point is that what marriage is, or what deserves to be called “marriage”, according to this approach, does not depend on our subjective intentions or moral beliefs (although these may make a difference to how marriages function in practice). It does not depend on what people regard as desirable. It depends rather on how the world is, in particular what kind of problems the institution of marriage

---

<sup>8</sup>Hauswald (2018) and Guala (2018) discuss this issue in more depth.

solves (in its various instantiations). To be sure, these problems are in part defined by the needs and desires people have (or the payoffs of their strategies). But, against this background, the ways in which they can be solved is an objective matter.

Elsewhere (Hindriks and Guala 2019) we have proposed to distinguish the “etiological” from the “teleological” functions of institutions, and this distinction turns out to be useful here as well. While etiological functions explain why token institutions exist and persist (namely, to generate cooperative benefits), teleological functions are projected by the members of society onto real and possible token institutions, to assess whether they are able to promote values such as equality, fairness, freedom, or justice. This distinction helps to keep some important questions separate. A reformist focuses on *teleological* functions when she asks a normative question such as

1. Which bundle of rules do we want to introduce in our legislation, or which equilibrium do we want to implement?

While a scientist asks a somewhat related *etiological* question when she asks

2. Would the reformed system of rules still fulfill the functions that institutions of this kind typically fulfill?

The functionalist approach thus saves the idea that what marriage is, is an objective issue that can be tackled scientifically. It also helps to keep the scientific (etiological) question distinct from the political (teleological) question of which one, among the many possible versions of marriage, we want to adopt. Keeping them separate is important because the answer to each question must be justified in a different way, using different methods of investigation, and relying on a different kind of expertise. If we are asking a descriptive question concerning the nature of a type of institution, then the experts to whom we must delegate the task are anthropologists, sociologists, or economists. But if we are asking a normative question about which token institution we should adopt in our legislation, then the experts are judges, political actors, and moral theorists. So it is important that we have very clearly in mind what kind of question we are asking, and who are the specialists with the competence to answer it. All that scientific experts can do is expose certain arguments in favor of or against change as illegitimate. More precisely, they can point out the extent of the Caligula problem and indicate how much change an institution can undergo before it ceases to belong to a particular type.

**Acknowledgements** Earlier versions of this paper were presented at the “Playing by the Rules” conference held at the Centre for Advanced Studies of Rijeka (May 2016) and the “Culture, Cognition and Action” workshop held at the Centre for the Study of Social Action (March 2017). We are grateful to several members of these two audiences for their comments during and after the talks.

## References

- Aoki, M. (2001). *Toward a comparative institutional analysis*. Cambridge, MA: MIT Press.
- Aoki, M. (2007). Endogenizing institutions and institutional change. *Journal of Institutional Economics*, 3, 1–31.
- Bicchieri, C. (2006). *The grammar of society*. Cambridge: Cambridge University Press.
- Binmore, K. (2010). Game theory and institutions. *Journal of Comparative Economics*, 38, 245–252.
- Boyd, R. (1991). Realism, anti-foundationalism, and the enthusiasm for natural kinds. *Philosophical Studies*, 61, 127–148.
- Boyd, R. (2000). Kinds as the ‘workmanship of men’: Realism, constructivism, and natural kinds. In J. Nida-Rumelin (Ed.), *Rationality, realism, revision* (pp. 52–89). Berlin: De Gruyter.
- Calvert, R. L. (1998). Rational actors, equilibrium, and social institutions. In J. Knight & I. Sened (Eds.), *Explaining social institutions* (pp. 57–94). Ann Arbor: University of Michigan Press.
- Epstein, B. (2016). Replies to Guala and Gallotti. *Journal of Social Ontology*, 2, 159–172.
- Greif, A., & Kingston, C. (2011). Institutions: Rules or equilibria? In N. Schofield & G. Caballero (Eds.), *Political economy of institutions, democracy and voting* (pp. 13–43). Berlin: Springer.
- Guala, F. (2016). *Understanding institutions: The science and philosophy of living together*. Princeton: Princeton University Press.
- Guala, F. (2018). Replies to critics. *Philosophy of the Social Sciences*, 48, 630–645.
- Guala, F., & Hindriks, F. (2015). A unified social ontology. *The Philosophical Quarterly*, 65, 177–201.
- Hauswald, R. (2018). Institution types and institution tokens: An unproblematic distinction? *Philosophy of the Social Sciences*, 48, 594–607.
- Hédoin, C. (2017). Institutions, rule-following and game theory. *Economics and Philosophy*, 33, 43–72.
- Hindriks, F. (2012). But where is the university? *Dialectica*, 66, 93–113.
- Hindriks, F., & Guala, F. (2015). Institutions, rules, and equilibria: A unified theory. *Journal of Institutional Economics*, 11, 459–480.
- Hindriks, F., & Guala, F. (2019). The function of institutions: Etiology and teleology. *Synthese*, online first.
- Hodgson, G. M. (2006). What are institutions? *Journal of Economic Issues*, 15, 1–23.
- Knight, J. (1992). *Institutions and social conflict*. Cambridge: Cambridge University Press.
- Lewis, D. K. (1969). *Convention: A philosophical study*. Cambridge, MA: Harvard University Press.
- Mantzavinos, C. (2001). *Individuals, institutions, and markets*. Cambridge: Cambridge University Press.
- North, D. (1990). *Institutions, institutional change and economic performance*. Cambridge: Cambridge University Press.
- Parsons, T. (1935). The place of ultimate values in sociological theory. *International Journal of Ethics*, 45, 282–316.
- Schotter, A. (1981). *The economic theory of social institutions*. Cambridge: Cambridge University Press.
- Smit, J. P., Buekens, F., & du Plessis, S. (2014). Developing the incentivized action view of institutional reality. *Synthese*, 191, 1813–1830.
- Sugden, R. (1986). *The economics of rights, co-operation and welfare*. Oxford: Blackwell, 2nd edition 2004.
- Watmough, S., & Ozturk, A. E. (2017, April 14). Will Turkey’s referendum mark the end of democracy and the birth of ‘Erdoğanistan’? [www.theconversation.com](http://www.theconversation.com)
- Weber, M. (1910). Diskussionsrede zu dem Vortrag von A. Ploetz über Die Begriffe Rasse und Gesellschaft. In *Gesammelte Aufsätze zur Soziologie und Sozialpolitik* (pp. 456–462). Tübingen: Mohr.