GOGAR and logical theories

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Abstract. There is a clear sense in which logic is a theory of our "game of giving and asking for reasons" (GOGAR) – logical laws articulate its most general principles. But what is the exact relationship between logical theory and the practices of giving and asking for reasons or drawing inferences? The usual picture is that people play GOGAR and logicians act as supervisors, confirming that some of the inferences that constitute the moves of the game are correct while pointing out that others are incorrect. To justify such supervision, logicians require some authority to underpin their arbitration of what is correct. Where could this authority stem from? The usual answer is that it stems from the fact that logical laws reflect some fixed structures either of the human mind or of the natural world. My claim, in contrast, is that the ultimate source of any such authority stems directly from the argumentative practices themselves – *viz*. from the norms inherent to them, which logic brings to light (and neatens). Thus it is not so that logic rectifies GOGAR on the basis of an authority acquired elsewhere, but rather that logic pinpoints the norms implicit in GOGAR to state the most general rules of the game in an explicit form.

Keywords. Game of giving and asking for reasons, logic, normativity, practices, logical laws, logical constants

Introduction

We have come to play the game of giving and asking for reasons (GOGAR). It is certainly not a game we generally spend much time on and it is often overshadowed by other, perhaps more enjoyable language games; it is, however, an important game, and in some respects perhaps the most important language game we play[1]. As Brandom (2000, p. 14) claims, "inferential practices of producing and consuming reasons are downtown in the region of linguistic practice". It is this game which opens the door to our specifically human way of thinking and reasoning, to propositional thinking, i.e. *thinking-that*.

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[1] It should be noted that all talk about "playing GOGAR" is, in reality, an oversimplification. We rarely (if ever) play GOGAR in its pure form as our asking for and/or giving reasons is usually enmeshed with other linguistic acts or games.

There is a clear sense in which logic is a theory of this game – logical laws articulate its most general principles. But what kind of principles?

Imagine you wanted to build a birdhouse. There are principles – technical directives – that you may follow to do it effectively. It is enough to consult your favorite DIY book. But there are also more general principles underlying the technical directives – principles of how our world works, natural laws. The former concern our human doings; the latter hold independently of what we do. Are laws of logic like the technical directives, or more like the natural laws?

If we could liken laws of logic to technical directives, we would be paving the way to a naturalization of logic. (Not naturalization in the sense of relating it to the non-human natural world, but via relating it to the activities of humans as a part of the natural world[2].) Nevertheless, many philosophers strongly object to such a proposal, being convinced that logic needs firmer foundations than could be mined from parochial human practices. Thus, Schechter (2013, p. 215), maintains that "the truth of logical truths and the falsity of logical falsehoods do not depend ... on our thoughts, language, or social practices". And Tahko (2021, p. 4776) characterizes "logical realism", a view on the foundations of logic, by the following two theses: "(LF) There are *logical facts* (or 'logical structure'), that is, there is a fact of the matter when it comes to the truth-value of claims about logic. (IND) Logical facts are independent of our cognitive and linguistic make-up and practices. They are *objective* in the sense that they are mind- and language-independent."

These views may look like they are urging for a deeper naturalization – *viz*. anchoring logic in the structures of non-human reality – but in fact they usually lead us away from the naturalistic paradigm. The trouble is that as it turns out to be impossible to extract the requisite structure from nature in a naturalistic way (more about this later), the conclusion tends to be that this structure pertains to a level of reality inaccessible by naturalistic methods and only explorable by methods peculiar to logic – such as by *apriori* analysis or by mining metaphysical insights. Therefore, wanting to be more naturalistic than anchoring logic in our discursive practices tends to be a step away from – rather than towards – naturalism.

Most logicians appear to think that though logic is linked to our discursive or inferential practices, the link is not such that it would let logic draw its principles from it. On the contrary, logic is to provide *norms* to evaluate these practices, and hence presumably, the other way round, to *impose* its principles on them. Thus Wright (2018, p. 427): "[The project of logic] is not, or not merely, the systematic general description of actual inferential practices but the development of theory that is apt for the evaluation of those practices, a theory at least part of

[2] There is an ongoing discussion about the "(non)exceptionality" of logic. I endorse a standpoint that can be dubbed *moderate non-exceptionalism* (Peregrin & Svoboda, 2021). For the details in which I think logical theory rests on the facts of human discursive practices see Peregrin (forthcoming).

whose brief is to constrain our judgements about what follows from what, about which are good inferences and which are bad, and why."

It would seem that to supply norms for such evaluations, logic requires an authority to back itself up. Where does the authority come from? Presumably not from the practices, for they are exactly that which is to be subjected to the authority. Hence we need to find the authority elsewhere, and anchoring the laws of logic either in some transcendental structures of the human mind or in objective reality – like the laws of physics – might seem the plausible option.

In this paper I argue that this option is not really viable and that we must seek elsewhere. In particular, I urge that our practices of the kind of GOGAR already have a normative dimension. Doing their theories, we are already tracking their inherent norms, and doing their *logical* theories we are involving ourselves not only with reporting the norms (i.e. stating that they are in force), but also making these implicit norms explicit as norms (*viz*. stating them as instructions for what we *should* do). Therefore, logic draws its authority from the very practices it is the theory of, possibly amplifying them by solidifying the norms which it finds, in a blurry form, in natural languages into the exact explicit norms we know from logic courses.

However, to understand this properly, we must investigate the "anatomy" of our practices in greater detail. We must see how complex our practices in general, and GOGAR in particular, are: especially we must see that they consist of (at least) two levels, the second one having to do with normativity.

Behavioral patterns, implicit rules and practices

Various kinds of animals do various things, and there are often such regularities in their behavior that we are warranted in talking about *behavioral patterns*. Many birds leave Europe for winter and fly to Africa to enjoy its warmer climate. Dogs obey their masters. Moles dig their underground tunnels. We humans give and ask for reasons. Etc.

Behavioral patterns may be engraved into an organism by natural selection, or they can be "learned". The fact that many birds leave Europe and spend winters in Africa is presumably of the first kind. The fact that dogs do what their masters instruct them to do is "learned". A "learned" behavioral pattern of an animal often results from the impact of other animals – be they menacing predators, or its conspecifics, or humans striving to train them. (Or, of course, it may be learned by trial and error.)

From our human viewpoint, a behavioral pattern of an animal is something which we can talk about and which we can sometimes influence (in various ways and for various reasons). This effort, on our part, can also be seen as a behavioral pattern – *our* behavioral pattern. (Those of us who own dogs tend to display the behavioral pattern of teaching them to obey our instructions.) Hence there is a "first-order" behavioral pattern of the animal (like sitting down at some command), and our "second-order" pattern, which strives to bring the "first-order"

pattern into being (like rewarding the dog when she sits down). The latter can be seen, in relationship to the former, as a "meta-pattern". Though it is certainly not the case that only we – humans – are capable of producing such "meta-patterns" (tampering with patterns of behavior of other animals), we are certainly exceptionally good at it. For example, the whole process of the domestication of animals can be seen as based on such meta-patterns.

We can tamper with the behavior not only of other kinds of animals, but also of ourselves. And certain ways of tampering with our own behavioral patterns can be considered as "normative attitudes", in Brandom's (1994) sense of "taking or treating a performance as correct or incorrect"[3]. Such attitudes are a matter of supporting some forms of behavior and suppressing others, in the extreme case by means of grooming and beating, while in the less extreme ones by subtler forms of positive and negative sanctions.

It is such normative attitudes coordinated across society that can be considered to constitute an implicit rule – *viz*. a rule not explicitly articulated, but implicit to human doings, the existence of which was urged both by Wittgenstein and by Sellars[4]. An implicit rule, in this sense, then, amounts to a coordinated tendency of a society to promote certain ways of behavior and to repudiate others. An implicit rule, for example, may put premium on giving certain kinds of reasons (e.g. those which accord with an accepted religious doctrine or with the current state of science), while condemning others.

We can imagine a pattern so interlinked with its adjacent meta-pattern that they found a single ("two-layered") pattern. We can assume, for example, that drawing inferences and assuming normative attitudes towards drawing inferences (viz. correcting, criticizing or endorsing the drawings) is a single complex pattern. And perhaps we can imagine patterns consisting of more than two layers. (Adding layers of behavior aiming at tampering with tampering ...) What I propose is to call such (two- or more layered) behavioral patterns *practices*. This, I believe, is consonant with the delimitation of practices put forward by Rawls (1955, p. 33): "any form of activity specified by a system of rules which defines offices, roles, moves, penalties, defenses, and so on, and which gives the activity its structure."[5]

My claim is that GOGAR and similar language games are *practices* in this very sense, and that our species is characterized by our tendency to supplement our behavioral patterns by their meta-level, thus making them into practices. The practice of drawing inferences consists not

[3] See Peregrin (2021b).

[4] Wittgenstein (1953) urged that there are rules, the following of which is a matter not of following an explicit prescription, but rather of practical "mastering a technique" (§199), there must be rules which I follow "blindly" (§219), the following of which is a "custom (use, institution)" (§199); while Sellars (1949, p. 299), claims that "the mode of existence of a rule is as a generalization written in flesh and blood, or nerve and sinew, rather than in pen and ink".

[5] Cf. also Rouse (2007).

only of the drawings (whatever exactly they consist in[6]), but also of the continual assessment of some of such drawings as correct, while others as incorrect – whereby the former are encouraged, while the latter are repudiated. Thus something comes to follow from something else not because it is drawn from it usually or habitually, but because this drawing is being taken for correct.

It is important to stress that the normativity which thus enters the scene is originally "primitive" in the sense of Ginsborg (2011). This means that normative attitudes start as nothing like propositional attitudes, and are certainly not assumed on the basis of some rational deliberation. On the contrary, it is this kind of primitive normativity that paves the way to propositional thinking and rational deliberation. However, to avoid any misunderstanding of our own approach we must stress here where we differ from Ginsborg's approach.

Ginsborg states (p. 237):

> [T]he situation of the child differs from that of the parrot in that the former takes herself, in continuing the series [2, 4, 6, 8, …, 40] with "42" or saying "green" when shown the green spoon, to be responding appropriately to her circumstances in the primitive sense of "appropriate" which I have described. ... Even though she does not say "42" as a result of having grasped the add-two rule, nor a fortiori of having "seen" that 40 plus two is 42, she nonetheless "sees" her utterance of "42" as appropriate to, or fitting, her circumstances.

Thus, someone's adding numbers counts as rule-governed when she not only produces a result, but there is a surplus attitude on her part: she "'sees' her utterance as appropriate to, or fitting, her circumstances."

This, in effect, is similar to the proposals of philosophers who take a person to be inferring iff they produce a conclusion on the basis of premises plus fulfilling a surplus condition, such as the "Taking Condition" of Boghossian (2014, p. 5):

> Inferring necessarily involves the thinker taking his premises to support his conclusion and drawing his conclusion because of that fact.

Not that I would think this is wrong, but in my view it is answering a question different from the one it is supposed to be answering. It is, I insist, not an answer to *What does it mean to add?* or *What does it mean to infer*?, but rather to *What does it mean to take oneself as adding?* or *What does it mean to take oneself as inferring*? And as is clear from Wittgenstein and the ensuing discussions, these are two disparate issues. (It may be that a positive answer to the former involves a positive answer to the latter, but certainly not *vice versa*.)

The point is that, as Wittgenstein (1953, §202) famously stresses, "to think one is obeying a rule is not to obey a rule"; hence to think one is adding or to think that one is drawing inferences is

[6] For theories thereof see Dogramaci (2013), Neta (2013), Boghossian (2014) or Hlobil (2019).

not to add or draw inferences – and this holds even if one's adding and drawing inferences involves one assuming "normative attitudes" to one's own performances. "Really" following a rule (especially "really" adding or drawing inferences) requires a supraindividual setup; as Wittgenstein puts it "it is not possible to obey a rule 'privately': otherwise thinking one was obeying a rule would be the same thing as obeying it".

Thus, the difference between merely thinking you are following a rule and genuinely following it is supplied by the community – it is your peers who correct you, and hence who make you see that what you thought was obeying a rule is not really that. Hence I am convinced that the normative attitudes that constitute the surplus that makes up our practice of drawing inferences are necessarily social. In other words, it is not enough to concentrate on a lone reasoner; I think that it is essential, rather than just accidental, that people target, by their normative attitudes, each other, making rule-following into what we have dubbed a practice. True, one aims one's normative attitudes *also* at oneself, but this is a consequence of one's aiming them at everybody.

The norms of logic

The picture sketched in the previous section helps with the explanation of how GOGAR (and rationality and logic) could have come into existence. The rudimentary normative attitudes came into being as first nothing more than reflexive (not reflective) reactions to some vocal displays, which turned out to be useful (in the sense of promoting fitness – we can imagine that, e.g., encouraging others to emit specific kinds of sounds in cases of danger and pestering those failing to do so, may be useful[7]). And gradually, displays of this kind gained, in this way, in significance and as they became nodes in a growingly complex web of interdependent displays, so their roles grew into what we call meanings. It is only then that we are in possession of propositions (the meanings of sentences capable of being asserted, i.e. moves in GOGAR), and consequently we can have fully-fledged propositional attitudes.

The usual picture, we saw, is that people draw inferences and play GOGAR and logicians supervise and rectify their steps: not that they would be called upon to arbitrate all kinds of inferences, but they can ratify the most important ones plus perhaps oversee that the whole game remains within acceptable bounds. To justify themselves, logicians need some authority to underpin their arbitration of what is correct. And the usual idea is that logical laws must bring to light some fixed structures of either the human mind or the natural world. Boole, one of the founding fathers of modern logic, put forward the former answer, while Russell, the star of a

[7] See Peregrin (2022).

later phase of the logic, urged the latter[8]. And indeed, the existence of such structures, which would relate to GOGAR analogously to the laws of nature relating to our struggle to grip the natural world, would explain what makes logic normative with respect to our reasoning.

However, I am convinced that the pursuit of such structures is in vain. An alleged structure of this kind is very hard to pinpoint. As for the human mind, speaking about its "structure" is usually somewhat metaphorical, for mind, of course, is not something we could easily seize and anatomize. (We can, of course, seize and anatomize the brain, but seeking logical structures therein is not a very promising enterprise.) And there is always the danger that what we "find" in the mind is what we have projected there. (As Wittgenstein, 1953, §295, put it: "When we look into ourselves as we do philosophy, we often get to see just such a picture. A full-blown pictorial representation of our grammar. Not facts; but as it were illustrated turns of speech.")

As for the world, we already have elaborated theories of its structures – produced by physics. We know that matter consists of atoms and they consist of various subatomic particles. Why should the world have also a *different* structure to be tracked by logic? When we see a tree, then we can see it as a "complex object", but it would be a complex of a trunk, branches etc. (or perhaps a very complex structure of atoms, as physics would suggest to us), not of a substance and a couple of properties. Of course, we *can* see it also in the latter way, but it will be because we need something for our sentences or formulas to directly correspond to[9].

My claim is that the ultimate source of the authority of logic comes from our argumentative practices, which are themselves in the focus of logic – *viz*. from the norms inherent to them. The reason is that GOGAR is a *practice* in the sense discussed above - already before one starts to do any theory of GOGAR, the game is, to use the famous phrase of Sellars (1963, p. 212), "fraught with ought". To be sure though, it is not the case that logicians simply pick up the norms and use them directly to arbitrate with – the norms inherent to the practices are often blurry, so logicians must bring them to a clear shape, which is a non-trivial enterprise[10].

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[8] While Boole (1854), presenting his "calculus of logic" talks directly about "laws of thought", Russell (1919, pp. 169–70), famously claimed that "logic is concerned with the real world just as truly as zoology, though with its more abstract and general features". And both views remain influential. For instance Hanna (2006) urges an universal "logic faculty" (akin to Chomsky's "language faculty") engraved somewhere within the human mind/brain; whereas Maddy (2014, p. ix), for example, argues that "logic is grounded in the structure of our contingent world; our basic cognitive machinery is tuned by evolutionary pressures to detect that structure where it occurs."

[9] "Sentence-shaped objects" as Rorty (1998, p. 35), put it (ascribing the wording to Strawson).

[10] Elsewhere I, with my co-author, argued that the process leading us from the blurry (proto)norms to explicit and determinate norms is best described as that of a reflective equilibrium (Peregrin & Svoboda, 2017).

This explanation of the source of normativity of logic is often thought to be unacceptable. The practices are considered too parochial and too arbitrary to be able to ground the authority of logic, to underlay – in Wittgenstein's phrase – the "hardness of the logical *must*"[11]. It is because of this that logicians pursue some firmer foundation in the depths of human minds or in the ultimate structures of our world. But I think, and I am going to argue, that logic *must* be parochial in this above sense – as logical rules must track the normativity implicit in the various instances of GOGAR we play in terms of our various languages, it cannot be separated from our linguistic practices as they take place in the natural world.

To explore this, we must penetrate still somewhat deeper into the "anatomy" of GOGAR (and our practices more generally). Consider, for comparison, chess and its rules: the rules of chess are what accomplish the constituting of the chess pieces. They change pieces of wood into pawns, rooks etc.; for to be a pawn is nothing else than to be subordinated to the rules of chess in a specific way. Unlike "strategic" rules advising how to use the pieces so constituted to win a game, they do *not* tell us what moves to do - they only tell us which moves *not* to do, thus delimiting the arena of chess games.

I will argue that our so-called logical laws govern the functioning of logical constants in a similar way to the rules of chess governing the functioning of the chess pieces. Like the bits of wood that are turned into the pieces by the rules of chess, we have types of inscriptions that are turned into logical constants by means of the rules of logic. Similarly to a piece in chess being subordinated to the rules of chess in a specific way, so it is that being a logical constant is to be subordinated to the rules of logic in a specific way.

Logical laws concern logical constants

An obvious problem with the picture as we have sketched it so far is that the laws of logic do not seem to be just instructions on how to handle linguistic items. They seem to be something much more substantial, having to do with the most general way our world functions or with the channels our thinking must remain in if it is to be rational. I argue, however, that this is not the case, that GOGAR, and especially its rules, *constitute* logical constants (which then, to be sure, serve as indispensable utensils providing for what we call rational thought.)

When we take such a logical law as *modus ponens*, it is quite clear that it fixes the functioning of a logical constant (Peregrin, 2021a) – in this case implication. It is inconceivable without it. Are all laws of logic like this, do they all feature logical constants in this way? Consider the law of non-contradiction, as a case of a law where this is perhaps not obvious. According to Łukasiewicz (1971, p. 487), Aristotle gives three versions of the law:

[11] See O'Neill (2001).

(a) Ontological formulation: "It is impossible that the same thing belong and not belong to the same thing at the same time and in the same respect."

(b) Logical formulation: "The most certain of all basic principles is that contradictory propositions are not true simultaneously."

(c) Psychological formulation: "No one can believe that the same thing can (at the same time) be and not be."

Many philosophers would claim that at least in the form (a) it has nothing to do with any language and indeed any representational system; it concerns exclusively the world and what may obtain in it. (In the case of the second formulation it does deal with our representations – *viz*. propositions –, but it still declares which states of the world making the propositions true/false can obtain.)

However, in order to understand the ontological formulation, we must understand what "not" means. What does such an understanding amount to? It would be very difficult to portray "not" as a representation (perhaps of the notorious truth table?) – we certainly do not come to grasp it as such. We rather learn its function within sentences. What are the most basic principles governing it?

The most basic principle constituting its meaning states that no statement is compatible with its negation[12]. It seems to be clear that a rule like this takes part in the constitution not only of the meaning of $\neg$, but also of the English *not*[13]. However, the formulation (a) only reiterates this, hence unless it is taken to *be* a rule co-constitutive of negation, it is vacuous.

In other words, if *the law of (non)contradiction* co-constitutes the meaning of *not*, then a claim violating it should not be intelligible. And indeed, what would it mean that "the same thing belong and not belong to the same thing", e.g. that life belongs and does not belong to a given animal? (Even the case of the notorious Schrödinger's cat, which is said to be dead and alive at the same time, is interesting just because this does not really make sense to us.) Hence (a) seems to be part of the definition of the meaning of *not*, not a claim about the world.

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[12] In modern logic, where incompatibility has become emulated as entailing everything or entailing absurdity, this principle has been articulated, by Gentzen (1934), as follows

$$\frac{A \qquad \neg A}{\bot}$$

In this shape it says that *A* together with $\neg A$ entail absurdity, hence, as absurdity is inacceptable, it can never be the case that *A* and at the same time $\neg A$.

[13] Yes, there is paraconsistent logic, which *rejects* the principle of (non)contradiction. But to every conceivable logical law there already exists a system that rejects it – logical systems created by fiat are cheap. The question is whether paraconsistent negation really deserves to be called *negation*; and there does not seem to be a clear answer to this question (Béziau, 2002).

The situation is very similar with respect to (b), where, however, the problematic word is not *not*, but *contradictory*. Again, what is its meaning, how do we understand it? It would seem that two propositions are contradictory only if they cannot be true simultaneously – hence again, the principle either is a part of the delimitation of *contradictory*, or merely vacuously reiterates it.

(The third version of the principle, (c), then, states a restriction concerning our ability to believe – it says nothing about the impossibility of a statement being true together with its negation, or about their incompatibility, but merely about our incapability of believing both of them. In this way, it seems to be a matter of psychology rather than logic.)

Now I claim that all laws of logic are of this kind – they are constitutive of logical constants. And it is clear that a logical constant always exists in the context of a language. Negation, for example, takes a sentence to a new sentence (or a proposition to a new proposition). (Perhaps it takes a true sentence or proposition to a false one, and a false sentence or proposition to a true one; perhaps its working is more complicated.) Anyway it can only exist over a set of sentences or propositions, *viz*. within a language.

Must it be a natural language? It can certainly be an artificial language such as those created during the past two centuries by logicians. Must it be a man-made language? Can it be a human-independent language, an "absolute" language harboring an "absolute" logic? Those who want to answer this question in the positive and do not admit a language created by a god usually want to lean such a language on some structure of the human mind or of the world – but we have already seen that this faces grave problems[14].

Anyway, what we now see as logical laws are the rules of our artificial languages (such as first-order predicate logic). And any logical investigation of a language differing from them requires identifying and deciphering the logical vocabulary of the new language; and here "deciphering" can hardly exclude the identification of the inferential roles of the words – either because the roles directly *are* their meanings (as we inferentialists claim[15]), or because it is hardly imaginable that we know their meanings but are ignorant about which arguments they support and which they do not.

But we must not forget that the ultimate aim of logical rules is to referee our games of GOGAR. This means that they must be tuned in to the rules for the specific languages we actually play it with. (This is not to say that logic should not be as general as possible, it can, however, never lose its anchor in our games that we, as a matter of fact, have come to play.) Before we can apply a law of logic to an expression (or expressions) of a concrete language, we need to know at least which basic rules already hold for the expression.

[14] See also Peregrin & Svoboda (2021).

[15] See Peregrin (2014).

Imagine we come to analyze a natural language with the usual toolbox of predicate logic. We have the constant "¬" and we want to use it to regiment some word of the language. What makes such a regimentation reasonable? Well, of course, the inferential rules holding for the word to be regimented are reasonably close to those governing "¬" – they may not be quite identical with them and may be more vague, but it would certainly make no sense to try to regiment, by "¬", an expression the inferential behavior of which would have nothing to do with that of "¬". And the whole business of logical analysis in terms of ordinary logic makes sense because the logic contains a constant the inferential behavior of which tends to approximate that of the words or constructions that we call *negations* in various natural languages. So the laws of logic are always at least partly extracted from a language and hence are peculiar to the language.

This is not to say that we cannot regiment, abstract and generalize: the logical constants of classical logic and some other logics did certainly originate in this way. However, these constants do not coincide with logical constants of the natural languages from which they were extracted. The former represents certain "minimal" toolkits providing for reconstructions of the latter[16]. The fact is that all the natural languages we know appear to contain logical vocabularies in which we can distinguish expressions that can be regimented by the logical constants of our artificial languages.

Does all this mean that there is no such thing as "pure logic"? Not necessarily, for what we can call so are the explicitly stipulated rules of the artificial languages we have erected atop of the sets of logical constants we have extracted from natural languages. But such a logic is *pure* not because it would be the absolutely right one, purged of the contaminations of natural languages, rather it is pure in the sense that it has been purged of all those features that made it into a vehicle of a *concrete* language game.

It is, nevertheless, a matter of fact that we do not use the artificial languages of logic in place of natural languages, not even when we write mathematical tractates. Therefore, they are useful only insofar as we can employ them to model the logical machinery of those languages we do use, i.e. insofar as we can "translate" what we find out about them into findings about a language in which we do reason. The logical vocabularies of artificial languages thus do not represent an absolute, human-independent logic, which is only approximated by logic inherent to natural languages – they are rather abstractions from the natural languages, the point of which rises and falls with their ability to serve as regimentations of our *de facto* discursive practices[17].

[16] See Peregrin (2020b) for an elaboration of this view.

[17] See Peregrin (2019; forthcoming).

Lingering questions

I am afraid that the account of logic presented above still raises some questions. Let us consider at least some of them.

Are the rules laying the foundation of logic as arbitrary as rules of when and how to greet whom? Not really. Everything we do is confronted with resistance from the world. The resistance can be meagre or fierce. In the case of personal greetings, it is next to nonexistent, and hence we can come up with multiple ways to greet one another. (True, once there is a way of greeting that is established as correct, there may be a *social* resistance to doing it otherwise, but this is a *post hoc* matter.) On the other hand, in the case of some other behavior the resistance may be so intense that there is only a single way to do it. (Think about a rock you want to climb – there may only be one humanly manageable path.) And logic is much closer to the second extreme than to the first one – the resistance, manifested in evolution, molded every language into the shape in which it has a negation, a conjunction, conditionals, quantifiers ... (more precisely it has some means that can usefully be approximated by negations, conjunctions etc. of our current artificial languages of logic).[18]

But what would prevent us from endorsing, say, the inference from *If it rains, the streets are wet* and *The streets are wet* to *It rains*? The answer is that nothing would prevent us from doing this, but it would have one of the two consequences: if the endorsement be peculiar to me, or a small minority of competent speakers, then it would simply be an error, repudiated by the majority; and if a great majority would do it, then *if-then* would no longer mean the same as in contemporary English. (It may well be the case that the general acceptance of this rule turns *if-then* into what in contemporary English would be expressed by *only-if-then* so that *If it rains, the streets are wet* would come to mean *Only if it rains the streets are wet*.)

However, this change of the inferential rule still comes to something reasonable; what about the choice which does not have such a reasonable outcome? What if we adopt, for example, a connective akin to *tonk*[19] that makes everything follow from everything else? The answer is that if we were to do this, the resulting language would be of no use (especially from the viewpoint of GOGAR) and would very soon fade away. The question why do we not have a language with *tonk*, or more generally an "unreasonable" language, is thus like the question why do we not have knives made of cheese.

Is this a reduction of reason to utility? There is a sense in which it is; we are rendering the point of reason as one specific kind of utility, which has to do with coping with our natural world as

[18] Not that the logical vocabularies of different languages neatly align with each other. For example, conditionals or quantification sometimes acquire different forms in different languages. However, they are not so different that they prevent the formation of a "neutral" toolbox that can provide for a reconstruction of any of these forms.

[19] Introduced by Prior (1960).

well as with our social interactions and coordination. Is this not degrading reason to something too down-to-earth? Should not the justification of reason be a matter of ... reasons? Well, a rational argumentation, GOGAR, requires a framework within which we can argue; and using GOGAR to justify the framework is obviously pointless.

Does this therefore imply that logic as a theoretical enterprise, instead of being like physics (tracking some structures of the inanimate reality) is more like economics, in that it is tracking human ways of doing things (and perhaps our assessing of them)? This is not far from the truth. Like economics, logic states laws governing not inhuman reality, but certain human activities. Like ecomomics, it produces an extensive web of roles that can be assumed by things of our world to help build our human normative niche[20]. (In the case of economics, there are, for instance, the roles of money that can be assumed by certain slips of paper; in the case of logic it is roles such as *conjunction*, *conditional* etc. that can be assumed by certain kinds of sounds or inscriptions.)[21]

Conclusion

GOGAR developed, spontaneously, as an effective tool for achieving a certain rapport among people forming human societies, as a tool of deepening human "ultra-sociality" and it has coordinated our researching of the world. It has developed as a rule-governed enterprise, though its rules were first merely implicit, carried by the normative attitudes of the players. The task of logic is to make its rules – namely its *constitutive* rules – explicit. Therefore, logic does not impose restrictions on GOGAR from without, it extracts the principles already incipiently present within the game. To see this, we must understand the normative nature of human practices, of which GOGAR is a paradigmatic example.

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[20] See Peregrin (2020a).

[21] Cf. Jorgensen (2009).

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