

Hard and Blind: On Wittgenstein's Genealogical View of Logical Necessity

Sorin Bangu

University of Bergen, Norway

Correspondence

Sorin Bangu, University of Bergen,
Norway
Email: sorin.bangu@uib.no

Abstract

My main aim is to sketch a certain reading ('genealogical') of later Wittgenstein's views on logical necessity. Along the way, I engage with the inferentialism currently debated in the literature on the epistemology of deductive logic.

Custom makes law
Proverb

1 | INTRODUCTION

At a critical juncture, this paper engages with the inferentialism currently debated in the literature on the epistemology of deductive logic.¹ For the most part, however, my task (which, once accomplished, facilitates this engagement) is to sketch a certain reading ('genealogical') of later Wittgenstein's views on logical necessity. Another way to describe what follows is as an extended commentary on a paragraph in his *Remarks on the Foundations of Mathematics* (Wittgenstein (1956); RFM hereafter, followed by the section-paragraph):

RFM I-128. The connexion which is not supposed to be a causal, experiential one, but much stricter and harder, so rigid even, that the one thing somehow already *is* the other, is always a connexion in grammar.

The 'connexion' mentioned in the paragraph is, specifically, between the premise(s) and the conclusion of a valid argument: if Alex is sitting on the green sofa in the living room, why *must* it be that Alex is sitting on the sofa? Why does this follow? How can it be that Alex 'already *is*' pinned down on the sofa?!

¹Originating in Boghossian's *Blind reasoning* (2003). See also Boghossian (2012), as well as replies by Williamson (2003), (2007), (2011).

This paragraph is important for understanding Wittgenstein's take on logic and modality not only because it is written in a declarative, presumably Wittgenstein's own voice, but also because it sounds, in the sequence of the remarks leading up to it, as if it conveys his fundamental thought about necessity (either logical, mathematical or metaphysical): it is a matter of 'grammar' – as Wittgenstein understands this notion.

So, how does he understand it? Despite having received a lot of attention over the years², this question, and the relation between grammar and logic, retains some unexplored aspects – and among them the most important is, I submit, the genealogical issue I will take up here, having to do with the relevance of the origin of logical propositions.³

2 | DEPTH GRAMMAR

The kind of grammar that interests Wittgenstein is, obviously, not the superficial ('surface') elementary school grammar (s-grammar henceforth). Yet we can make progress in understanding what he is after – the 'depth' grammar, or d-grammar – by reflecting on a mistake of a superficial nature.⁴ Consider this sentence:

(1) She are your sister.

Any competent speaker will rush to point out that (1) is *not* correct. This is banal enough, but the situation becomes more interesting when the confused utterer follows up unexpectedly and asks: but *why* is (1) wrong?, or *how do you know* that (1) is not correct? – and then expresses visible dissatisfaction with our answer: 'It is just the rule for conjugating the verb *to be*; it is a convention.'

Although we realize that we cannot go any further in answering this why-question, we may be tempted, if only momentarily, to think that maybe there *is* something *more* to say here⁵: perhaps this follows from a more general s-grammatical rule? But this answer will only push the question back: indeed, what entitles us to claim that *we* have got the correct rule/form of the sentence here?! Normally, however, these doubts just do not crop up. The deviant speaker should better *learn how to speak* properly first (and ask fewer such questions!), otherwise he will stand out as a quasi-illiterate outcast (even if, in the end, we would understand him). So, we just leave it at that, although we feel that there is a sense in which that was an *odd* question to ask.

Consider now the situation in which our speaker utters the following sentences:

²The most comprehensive discussion of grammar I know of is Forster (2004). Enlightening material on logic and/or grammar is also in Stroud (1965), Canfield (1981), Garver (1996), Glock (1996), Pears (2006), Baker and Hacker (2009), Schroeder (2009), Fogelin (2009), McGinn (2011), Maddy (2014), Steiner (2014), as well as in his (1996) and (2009), although these two works deal mostly with mathematics.

³In addition to RFM, I shall also dig into material found in Wittgenstein's *Lectures on the Foundations of Mathematics. Cambridge 1939* (Wittgenstein 1976); hereafter LFM, followed by the page number). References to *Philosophical Investigations* (Wittgenstein 1953) will be in the form 'PI', followed by the number of the paragraph.

⁴This is the same route that G. E. Moore (1932/2016) takes in discussing Wittgenstein's view on grammar. Wittgenstein distinguishes the two grammars in PI 664. Also, it is important to keep the notion of 'depth grammar' free of any Chomskyan connotations.

⁵As we will see shortly, although, indeed, there is nothing more to say in the sense of *justifying* the rule by reference to a Platonic super-reality, the reading I will articulate here will trace the genealogy of rules back to some hyperstable linguistic regularities.

- (2) He is your sister.
- (3) Your sister heard a light in the forest.
- (4) If she cut all the trees in the forest, then a tree is left uncut.

As far as s-grammar goes, these sentences seem unobjectionable, so our previous reason for correcting the speaker cannot be invoked anymore. Yet something goes, again, obviously wrong here. Unlike (1), correcting (2) and (3) requires more information ('*She is your sister*' or '*He is your brother*'? '*Saw a light*' or '*Heard a sound*'? Is there perhaps an (implicit) temporal element involved in (4) that can clear up the confusion? '*She cut all the trees last time we asked her to do it, but now she left one standing.*' And so on.)

Now although we can surely fix these three sentences, if we leave them as they are, we *do not understand* the speaker. This is a sign that the problems we face point to something else than s-grammar: d-grammar.⁶ And we are, again, willing to bet that if this speaker continues to talk like that, and keeps challenging our entitlement – '*but how do you know...?*' – then he will become subject to rather severe forms of social exclusion.

As already suggested, Wittgenstein believes that such (d-)grammatical considerations are essential to (dis)solving the venerable puzzle of *logical necessity* set up at the beginning (i.e., what's the nature of the unbreakable 'connexion' mentioned in RFMI -128). We can now start moving the discussion in this direction by considering other similarities and differences between (1), on the one hand, and (2)-(4) on the other. Let us ask: do these sentences have a truth-value?

It is perhaps not hard to accept that (1) simply does *not* have a truth-value, as it stands — although it comes close to having one (by comparison to mere noise like '*Are sister your she*', which surely has none). (1) aside, what about (2)-(4)? Or, coming to it from a different angle: if we believe that they are in the position to say something truth-valuable, what is their truth-value?

Obviously, they are not true. Yet to say that they are false (*just* false) does not seem *enough*. In these situations, we feel that we are not fully characterizing such utterances by simply saying that they are false. They seem *more* than false; they are *necessarily* false. Not only 'he' is not someone's sister, but he *cannot* be anyone's sister; lights *cannot* be heard, only sounds; if she cut *all* the trees, then a tree *cannot* still be standing.

Similarly, once we accept that

- (5) Sisters are female.

and

- (6) If she cut all the trees, then this tree is cut.

have a truth-value (true!), then they seem to be *more* than true, since any possibility to be false is ruled out. To mark this specialness, we call them *necessarily* true.

Now we have reached a key-point in understanding Wittgenstein's position, because we have just succumbed to the temptation to treat (2)-(6) as sentences with a truth-value. Thus, we suddenly ended up with a (*philosophical*) problem on our hands: since these sentences also seem undeniably *special*,

⁶These examples are perhaps the simplest d-grammatical issues one can point out to. As we will see in a moment, the domain of d-grammar is more diverse and other examples can be difficult to parse. Henceforth, 'grammar' refers to d-grammar, unless specified otherwise.

we have to account for their specialness. That is, we have to produce an *explanatory theory* – of their necessity.⁷

We shall discuss what is the core of any theory of necessity below. Before we do, note, importantly, that we are by no means forced into this theoretical project. There is an alternative available here, Wittgenstein urges: not to take the very first step (where, as PI 108 says, “the conjuring trick” is done), that is, to be suspicious about the *status* of such sentences to begin with. We can simply say that (2)-(6) *do not* have a truth-value at all, despite strong appearance to the contrary.

This appearance is strong indeed, an impression reinforced by their correct s-grammatical declarative form. However, that they are propositions, statements with a truth-value is, Wittgenstein would say, a (grammatical) ‘illusion’.⁸ In fact, just like (1), but in a different manner, they too fail to qualify for truth-valuation. Yet, again like (1), they are not useless. They actually have a very important use, to which Wittgenstein returns systematically: as tools to *teach* someone how to speak – and this includes what *not* to say (e.g., (2)-(4)). That is, they help one learn the very meanings of the concepts involved. Thus, it is perhaps on the basis of this analogy that, for Wittgenstein, these ‘special’, ‘necessary’ truths (and falsehoods) have a *grammatical* role – mirroring the humble s-grammatical role that (1) may play in a school textbook. This role is also similar to the role played by the standard (units) of measurement in reporting concrete operations of measurement: every measurement has to be expressed in the corresponding units; e.g., area measurements must be reported in square meters (or square feet), and it would be nonsense (just like e.g., (3) above is) to report them in meters (or feet), or seconds, or liters. So, summing up, (2)-(6) are better seen not so much as *moves* in a language game, but as *implicit rules* of these games.⁹ Everything we say has to fall within the boundaries set up by these rules.

On our way to the announced discussion of the most typical theoretical account of necessity (a form of Platonism – about rules¹⁰), let us first reiterate why the demand for such an account (seems to) arise in the first place. For Wittgenstein the ‘diagnosis’ is this: generally speaking, it arises from a failure to understand how language works, that is, from a failure to realize, or accept that different linguistic items play different roles – and this would be a failure to achieve what Wittgenstein calls ‘*übersichtliche Darstellung*’ of our language (‘view-from-above that allows a panoramic presentation’ of our language; PI 122).¹¹ More concretely: had we realized that (2)-(6) have the status of conventions, or rules (as opposed to bona fide propositions), we would not have been puzzled by questions about their truth (or falsehood) to begin with. Hence, the need *to say more*, i.e., to articulate an explanation-theory of what makes them *special truths* (or falsehoods) would not even have been on the table – since it is an elementary point that rules just are not the kind of sentences that can be true or false, like questions or interjections.¹²

⁷In the current jargon, the necessity of (5) is semantical, while that of (6) is formal-logical. In the end, the difference will not really matter.

⁸There are other such illusions mentioned by Wittgenstein in various places: that, since the proposition ‘He is in pain’ requires evidence and thus *can be known/doubted*, so does the s-grammatically similar proposition ‘I am in pain’; that (as Frege would have it) $2+2=4$ should be understood as saying that ‘2+2’ and ‘4’ are two names referring to the same object (of sorts: *the number four*) – much like ‘Freddie Mercury’ and ‘Farrokh Bulsara’ refer to the same individual man; and so on.

⁹I called them *implicit* rules to signal that they are not explicit rules; an explicit grammatical rule would be ‘Don’t say things like (2)!’ But one can of course also think of them as special moves in the game, where what makes them special is that the rules are formulated by reference to them; the rules urge one not to make precisely *these* moves in the (language) game.

¹⁰Steiner (1996, 193). This is to be distinguished from the more familiar Platonism about (mathematical) objects.

¹¹The “resources of our language” mentioned in PI 109 (“(...) the bewitchment of our understanding by the resources of our language”) are the capacity of our language to disguise rules as statements; e.g., ‘the bishop moves diagonally’.

¹²Note that this is, again, a grammatical point: we cannot explain why *this* is so any further.

Now, in a sense, *this is it*. The gist of Wittgenstein's account – that once we pay attention to grammar, the problem of 'explaining' logical necessity turns out to be a pseudo-problem – has been presented. Yet the discussion cannot end here, since Wittgenstein recognizes that any rules can be challenged; no surprise then that in RFM I-113 (and after) he introduces and confronts a logically deviant character. (Yet, interestingly, only the mathematically deviant pupil who challenges the '+2' rule was retained in the PI). These issues then – the authority of rules and logical deviance – are of major importance, and will be tackled below. (This needs stressing, since, with few exceptions, this is the place where many commentators actually end their discussion. We shall return to this point later, in connection with inferentialism.)

One more clarification is in order before we move on to examining Wittgenstein's take on the (Platonist) account of logical necessity. It is important to add at this stage that, for Wittgenstein, the domain of the grammatical is quite large and diverse. Yet there is, as far as I can tell, no recipe for how to identify grammatical items easily. A good suggestion, however, is the one we already encountered when we discussed s-grammar: whether the *entitlement* question ('how do you know...?') sounds odd, or not. The oddness can be assessed by considering a related question: what *evidence* would genuinely answer such a query? Importantly, this refers to a specific kind of evidence, namely for the existence of certain states of affairs in the world. This is evidence which, when collected systematically, may even qualify as scientific evidence ('How do you know that there is a chocolate bar in the drawer / a bacteria in his blood sample? I saw it there / through a microscope.') I will call this 'first-order' empirical evidence.

The contrast intended here is with another kind of evidence, which is *also* empirical, but it comes in the form of *information about the existence of certain linguistic conventions, or practices, in a community of speakers* – that is, information about language we typically give to someone who learns how to speak a natural (or specialized) language. (Or, information needed to play a certain *language-game*.) For example, since the medical practitioners define *rubella* as the existence of a certain virus in one's bloodstream¹³, the *only* answer to the entitlement question 'How do you know she has rubella?' (when the questioner knows that the virus was found) consists in simply informing the questioner about the existence of the definitional convention.¹⁴ This is then to say that, given these medical facts and practice (the consensus leading to the creation and use of such definitions), the sentence 'She has rubella when a certain virus is found in her blood' does *not* have a truth-value; it is *not* a proposition. Instead, it is a grammatical item¹⁵: again, not a *move* in the (medical) language game, but a *rule* to set up the game.

3 | 'EXPLAINING' LOGICAL NECESSITY

A good place to start discussing the theoretical project that Wittgenstein wants to deem futile is RFM I-8:

¹³<https://www.who.int/news-room/fact-sheets/detail/rubella>

¹⁴One can of course realize all this, and ask the question 'how do you know...' as meaning 'how do you know that this is what the dictionary says? i.e., 'are you sure you have not misread it?' This is not an odd question anymore, and is answerable in familiar ways ('check yourself!'). Or, if one believes that rubella has certain *essential* features, one may ask the question as a challenge to the dictionary itself; i.e., are *those* features captured by the rule-definition given in the dictionary? ('I see the definition, but is this *really* rubella...?') Wittgenstein must have had issues like this in mind when he wrote: 'Consider: "The only correlate in language to an intrinsic necessity is an arbitrary rule. It is the only thing which one can milk out of this intrinsic necessity into a proposition"' (PI 372). We shall return to what 'arbitrary' may mean soon.

¹⁵This is what Wittgenstein called in *Blue Book* (Wittgenstein 1958), p. 24-25 a 'criterion' (for the correct use of the concept), in contrast to a 'symptom', using angina as an example.

But still, I must only infer what really *follows!* – Is this supposed to mean: only what follows, going by the rules of inference; or is it supposed to mean: only what follows, going by *such* rules of inference as somehow agree with some (sort of) reality? Here what is before our minds in a vague way is that this reality is something very abstract, very general, and very rigid. Logic is a kind of ultra-physics, the description of the 'logical structure' of the world, which we perceive through a kind of ultra-experience

(with the understanding e.g.).

The answer Wittgenstein accepts is the first alternative ("what follows, going by the rules of inference"¹⁶), but the specter of an *additional* factor, an entitling objective 'reality' will not disappear. In RFM I-119 the worry about the *objectivity* of logic is captured metaphorically as the workings of a 'machine':

"But I can infer only what actually does follow." –That is to say: what the logical machine really does produce. The logical machine—that would be an all-pervading ethereal mechanism. –We must give warning against this picture.

Eventually, the tone of the remarks becomes less acute, although Wittgenstein continues to draw attention to how pointless it is to invoke a 'reality' responsible for how logical inference works:

RFM I-156. Isn't it like this: so long as one thinks it can't be otherwise, one draws logical conclusions. This presumably means: so long as *such-and-such is not brought in question at all*.

The steps which are not brought in question are logical inferences. But the reason why they are not brought in question is not that they 'certainly correspond to the truth'— or something of the sort, — no, it is just this that is called 'thinking', 'speaking', 'inferring', 'arguing'. There is not any question at all here of some correspondence between what is said and reality; rather is logic *antecedent* to any such correspondence; in the same sense, that is, as that in which the establishment of a method of measurement is *antecedent* to the correctness or incorrectness of a statement of length.¹⁷

I will have more to say about these positive suggestions in the next section. They have to be read, I propose, as developing a key-idea introduced in the last sentence of RFM I-9 (which I underline below):

What we call 'logical inference' is a transformation of our expression. For example, the translation of one measure into another. One edge of a ruler is marked in inches, the other in centimetres. I measure the table in inches and go over to centimetres *on the ruler*. – And of course there is such a thing as right and wrong in passing from one measure to the other; but what is the reality that 'right' accords with here? Presumably a convention, or a use, and perhaps our practical requirements.

¹⁶Thus the famous theme of rule-following (and the 'paradox' associated with it in PI) makes an appearance. It is taken up later in e.g., RFM I-113 and RFM I-116.

¹⁷Note that here Wittgenstein avoids the modal form; he does not say 'steps which *cannot* be brought in question...' – because he thinks that "It is true that *anything* can be somehow justified" (RFM VI-39). I will comment on this line (an obvious allusion to the logical skeptic/deviant) later.

We can begin our discussion with this remark, although the explication of the central proposal (made in the last sentence) will have to wait until the next sections. The stage is set naturally enough: to infer deductively is to start with one sentence ('expression') and end with another one.¹⁸ Wittgenstein cashes this out as a 'transformation' operation, and the analogy he offers is with transforming measuring units into one another. This, however, is a reciprocal transformation, and so would only model logical equivalences. While not all inferences are like this, the transformation idea can still serve as a general guide here. If we start with 'Alex sits on the green sofa' and we move to 'Alex sits on the sofa', we have thus 'transformed' the first into the second. We did lose some information, but sometimes transformations do not preserve everything (in this case, we can perhaps think of the transformation as currency exchange.)

Put in these terms, Wittgenstein struggles with a family of questions about which transformations are *allowed*, *sanctioned*, *correct*, *right*, etc. – and why. How can we characterize them? Is there any feature that they have, and the ones not allowed are missing? As I intimated already, on my account his answers are going to be unambitious, unexciting, even disappointing by the usual standards of philosophical discussion. However, as we'll see soon, one can understand why they are nevertheless illuminating by addressing another, *genealogical* question: Where do these transformation rules come from? We'll get back to these issues below.

As anyone reflecting on logic knows, a major concern in accounting for the nature of logical inference is to ensure the objectivity of these 'transformations'. Degenerate cases aside, given a sentence, only certain sentences follow from it – not just any sentence one may wish. It's not up to anyone to choose the result of the transformation. There should be no doubt that Wittgenstein fully accepts this objectivity.¹⁹ What worries him then? *A certain way of modeling this objectivity* – a certain 'picture', as he calls it — which he plans to 'give warning' against.

This objectivity, Wittgenstein suspects, is usually construed by analogy with the objectivity of natural science.²⁰ This is not surprising since, after all, this is a kind of objectivity we are quite familiar with²¹: it's not up to anyone what happens when a cup of water is heated up, or when a heavy object is dropped to the ground. We do not choose the results of these 'transformations'; something – a reality: *physical reality* – constrains us.

Thus, one (the Platonist) may think that logic needs a similar model to ensure that the prized goal – objectivity – is attained. This brings in the idea of a constraint (a 'reality') into the picture. Yet mere objectivity is not enough, because, as we recall, we just accepted that the truth of 'If Alex sits on the green sofa then Alex sits on the sofa' is not only objective but also *special*, and *different* from some other similar and no less objective truths, such as 'If Alex sits on the green sofa then Alex's weight deforms the green sofa'. Unlike the second conditional, the first could not but be true: Alex 'already is' on the sofa! Hence, the analogy goes like this. In the case of the second conditional, the objective result (the deformation) is produced by a certain physically real mechanism (involving contact, action of the force of gravity, etc.). So, a mechanism must be involved in the case of the first conditional too, ensuring that Alex sits on the sofa. Only that now, since the mechanism cannot be a physical one, it has to be an *ultra-physical* one.

¹⁸Trivially, in case we have several premises we can always form their conjunction as one sentence.

¹⁹Despite readings such as Dummett's (1959).

²⁰In the *Blue Book*, he writes: "Philosophers constantly see the method of science before their eyes, and are irresistibly tempted to ask and answer questions in the way science does. This tendency is the real source of metaphysics, and leads the philosopher into complete darkness." (Wittgenstein 1958, 18)

²¹This is of course not the only kind of objectivity available (e.g., there is a perfectly fine sense in which certain things *are* expensive). One can surmise here that Wittgenstein chose to make the point in terms of this kind of objectivity because of the immediate connections with his hostility toward scientism. See fn. 20.

At this point, Wittgenstein's key-insight is that once we honestly question ourselves, we must admit that we actually have *no idea* what this latter kind of mechanism (a super-mechanism) looks like. We (if Platonists) cannot provide any *details* of its workings ("what is before our minds in a vague way is that this [ultra-physical] reality is something very abstract, very general"). In the end, *all* we have done is to nominally postulate it. That is, we gave it a name ('ethereal mechanism'), as a result of being "seduced into using a *superlative* expression" (RFM I-124).

However, there is a complication. Natural science does feature a model that *seems* to fit our need well here. This is *kinematics*, the subdiscipline of mechanics in which one assumes that mechanisms and their parts are perfectly rigid ("in it one works out how pistons will move if one moves the crankshaft in such-and-such a way, and so on." LFM p. 196). Thus, kinematics is brought in at RFM I-120, and the next remark reads as follows:

RFM I-121. The hardness of the logical *must*. What if one were to say: the *must* of kinematics is much harder than the causal *must* compelling a machine part to move like *this* when another moves like *this*?

To keep the main idea in sight, let's recall that we are now in the middle of the process of concocting a (philosophical) *explanation* of the specialness of certain truths; or, rather, of what we take – gratuitously, Wittgenstein believes – to be such an explanation. We are constructing this theory by *extending* to logic a simple model (picture) of inexorability²², i.e., the kinematical one – where the real, sturdy steel rods (and mechanisms in general) are idealized as rigid. But logic is not physics, so for logic we have to posit a *super-rigid* mechanism: a 'logical machinery'.

Familiar machineries push and pull things, while conserving energy; the logical machinery *transforms one sentence into another, while preserving truth*. And, crucially, it does this objectively – and this is precisely why we had to posit a mechanism, like in natural science: to be free of any subjectivity. Then, as a natural consequence, since we are *extending* the idea of a mechanism *beyond* physics/kinematics, the mechanism *has to be* 'ethereal', i.e., a super-mechanism whose parts are super-rigid. As Wittgenstein puts it,

When we think of a logical machinery explaining logical necessity, then we have a peculiar idea of the parts of the logical machinery – an idea which makes logical necessity much more necessary than other kinds of necessity. If we were comparing the logical machinery with the machinery of a watch, one might say that the logical machinery is made of parts which cannot be bent. They are made of infinitely hard material – and so one gets an infinitely hard necessity.

(LFM, p. 196)

We thus (think that we) managed, *via this extension*, to go beyond natural-physical necessity, and reach into the rarefied domain of the ultra-physical, or logical necessity. We may think that we found what *entitles* us to say that 'the conclusion *really follows* from the premise': it is the operation of the logical machine whose super-rigid parts work in such a way that the premise gets invariably turned into the conclusion, while truth is preserved.

Yet the problem signaled above did not go away. If we are honest with ourselves, we must admit that we have only "a peculiar idea" of such a super-mechanism (it has to have "super-rigid" parts), and not even a minimal description of its function, of *how* it does what it is supposed to do - while,

²²Maddy (1993, 67-68) reconstructs such a similar illegitimate extension in the case of mathematics.

importantly, we can give such a description for the mechanisms of kinematics. We now have introduced several more expressions *to talk about* logical necessity, but they are effectively empty; so, we did not in fact succeed in pinning it down. As Wittgenstein stresses in the discussion in LFM p. 196-199, first and foremost it is not at all clear what ‘super-rigid’ *means*: what is the property in the ultra-physical world picked out by this word? Rigidity in kinematics comes from a familiar source: it idealizes, or approximates mundane physical properties; but we cannot tell where super-rigidity *comes from*. He notes in LFM, p. 199:

(...) The idea of *super-rigidity* does *not* come from the same source which the idea of rigidity comes from. The idea of rigidity comes from comparing things like butter and elastic with things like iron and steel. But the idea of super-rigidity comes from the interference of two pictures – like the idea of the super-inexorability of the law. First we have: “The law condemns”, “The judge condemns”. Then we are led by the parallel use of the pictures to a point where we are inclined to use a superlative.

‘Comes from the interference of two pictures’ means – the idea of super-rigidity is muddled, confused, the result of some sort of ‘seduction’. (As RFM I-124 notes: “You have no model of this superlative fact, but you are seduced into using a *super-expression*.”; see also PI 192)

The two pictures mentioned here can be identified by comparing (see RFM I-118)

(a) ‘the law condemns him to n years in prison – and not to a different number of years’

and

(b) ‘the law condemns him to n years in prison –even though the judge condemned him to fewer years.’

In (a), we construe inexorability in familiar terms, as determinateness, uniqueness, lack of ambiguity; in (b) we construe it as a higher, awe-inspiring Kafkaesque power that the law somehow has and the human judges lack. So, in (b) we have a ‘superlative fact’ (super-inexorability) for which we actually have ‘no model’, i.e., we do not quite understand what it means to say that (except for the mundane point that the judge was lenient). Similarly, that the parts of the logical machinery are super-rigid is also such a superlative fact. (See also LFM, lecture XX.)

To conclude, this ‘substantial’, realist-flavored explanation of logical entitlement sketched above is nothing more than a collection of vacuous super-expressions. It is a pseudo-explanation and we’d better set it aside.

4 | GRAMMAR AND INFERENCE. BOGHOSSIAN’S LIST

Consider (2) again: ‘He is your sister.’

We say that this *cannot* be so. But why? What *prevents* a man from being someone’s sister? We realize (today) that we should not look for an answer in terms of a person’s biological make up. Suppose that Alex, an adult, born with the biological features of a male, suffers an identity crisis and after a sex change operation, hormone therapy, etc., acquires visible biological features of a female. Before the sex reassignment surgery, Alex was Alice’s brother; after, we would say that Alex is Alice’s sister. Yet note what just happened: once *recognized as* a woman, and if this person

self-identifies as such, Alex will not be *called* ‘he’ anymore. In fact, the claim here is stronger: Alex *cannot* be called ‘he’ anymore.

We now see why this impossibility has nothing to do with biology; it is not of a physical nature – and, as we recall from the previous section, not of an ultra-physical nature either. The query seemed initially an empirical one (it sounded as if we were looking for some *obstacle* that once removed would let a man be someone’s sister), yet it surreptitiously turned into a *normative* one: why is it *wrong* to call ‘he’ someone we recognize (and who self-describes) as a woman?²³ And, as soon as we raise the entitlement question (‘*how-do-we-know it is wrong?*’), we realize that we are in an odd situation. Indeed, what kind of answer, and (first-order) evidence can we present here? This difficulty is, again, an indication that we crossed into the domain of the grammatical. We have no other answer to offer here except to point to a rule, or linguistic convention. The unbreakable, super-rigid, *essential* connection—between ‘he’ and ‘man’ (‘brother’), ‘she’ and ‘woman’ (‘sister’), the universal and its instantiation in (6), and so on—is neither physical, nor ultra-physical (‘metaphysical’); it is grammatical, conventional.²⁴

As already intimated, all this holds for logic, too; but before we get back to logical matters we need to introduce in discussion a crucial observation that Wittgenstein makes about rule-following in PI 219, that we ‘obey the rule *blindly*’. Although more than one reading of this somewhat cryptic remark has been advocated, the understanding I favor here (and will subsequently draw on) reads ‘blind’ as ‘blind to distractions’, or *irrelevancies*. We are blind just as Lady Justice is blindfolded, attending only to what is relevant in judging the matter.²⁵ Thus, ‘blind’ should *not* be interpreted as denoting lack of intelligence or mindlessness while acting. Rather, we act blindly when we know precisely what to do (as opposed to hesitating); that is, when different alternatives do not occur to us, hence we do not have to reflect on them and thus there is no choice to justify²⁶: in this sense, we act without justification.²⁷ In this particular context, it means that when we speak, and employ the correct grammatical pronoun, no irrelevant factors bother us: once we recognize N as female, we refer to N as ‘she’ (or ‘her’) *regardless* of N’s age, height, skin color, nationality, etc.—or even, as we have it in this case, N’s biological history.

This understanding of ‘blindness’ will be carried over to the next stage in the argument, the discussion of logical matters. As I observed earlier, for Wittgenstein the domain of the grammatical is quite inclusive and I shall now consider another kind of item that belongs to it, sentences involving general logical schemas.²⁸ Consider *modus ponens*:

MP: If p, then q, and p; then q

So, let us ask our entitlement question once again, in this more specific version: *How do we know* that there are no uniform substitutions for p and q such that truth-preservation fails? What *entitles* us to say

²³As is perhaps clear, here ‘wrong’ is not meant in a primarily moral sense.

²⁴PI 371 sums it up: “*Essence is expressed in grammar.*” I will have more to say below about the worry that then grammar may be conventional.

²⁵See the discussion in Stern (2004, 154-155), especially the criticism of Fogelin’s and Kripke’s readings of the remark.

²⁶“When I follow a rule, I do not choose” (PI 219). As RFM VII-60 stresses (*italics in original*), rule-following does not take place “*entirely without thinking*”, only “*without reflecting*”.

²⁷“I can give no reason” because “I know what I have to do in any particular case. I know, that is I am in no doubt: it is obvious to me.” (RFM VI-24)

²⁸We encounter such a formal element in RFM I-10, where he mentions universal elimination.

that there are no counterexamples to MP? How can we justify the claim that it is *irrelevant* what specific replacements for *p* and *q* we make? In this sense, why can we infer *blindly* according to it?

Since we deal with an entitlement question here, it is unclear what kind of answers would satisfy the questioner. Indeed, why are we so sure that there is not even one ‘real’ counterexample?²⁹ And this—to the verificationist’s dismay—independently of *any* testing! (Which, if required to be exhaustive, would be an endless task anyway. Also, it would be preposterous to take the answer to reflect an inductive judgement: ‘Look, we have tried 765 instantiations of MP and none has produced a counterexample, so it is very likely that this will never happen’.)

We are now well into the domain of the grammatical. The answer to this entitlement question, just as to all such questions, can only be: ‘It is stipulated so.’ For these schemas (MP, and a few others) are transition rules (‘transformations’) whose *learning*, and silent acceptance very early in our education enables us to participate in (more sophisticated) linguistic exchanges. We say that a person who has been trained to follow the MP rule ‘reasons’, ‘thinks’—or, at least intends to do so. (I.e., she is able to do other things in addition to just describe the physical world, which one does by using sentences of a simpler form: ‘This...is so-and-so.’) In this sense, *the (intended) use of MP* (as well as a few other such rules, e.g., conjunction introduction, disjunctive syllogism, universal elimination, etc.), is *what is called* reasoning, thinking, inferring.³⁰

By breaking such rules, one will not risk being regarded as untruthful, but will *not* be *understood* at all. The analogy Wittgenstein proposes here (in RFM I-9) is with someone who says they measure, but lack a standard unit. This person’s reports of specific measurements will not be suspected to be inaccurate; instead, we would say that they *are not (yet) in the position to measure at all*. Just as the possession of, and the ability to use, a standard unit antecedes (not only temporally, but also conceptually) the obtaining of measuring results, so does one’s learning and ability to follow these rules *antecede* their ability to participate in linguistic exchanges (in particular: to infer).

Summing up, Wittgenstein’s answer to the entitlement question above is, again, one may say, rather unexciting: of course we have no hesitation to say that there are no counterexamples, because we will *not accept* any instantiation of MP to be *called* a counterexample—just as no (person recognized as a) man is (called) a ‘sister’. Thus

(7) We are *entitled* to infer *blindly* according to MP

has to be treated as a rule, and *not* as a proposition, i.e., open to refutation and sensitive to (first-order, empirical) evidence.³¹ Rather, (7) expresses yet another convention—of grammar. Admittedly, its s-grammar may be deceiving; although it may sound like a statement (very much like e.g., ‘We are in town until

²⁹I am hinting here at the famous (supposed) counterexample to *modus ponens* due to McGee (1985). (For a more recent discussion, see MacFarlane and Kolodny (2010)). An examination of this specific example would take us too far afield, but it is not needed since I regard the issue as settled by Sinott-Armstrong et al. (1986, 300): “McGee’s case against *modus ponens* depends upon three confusions”, of which germane to this context is the first one: “*modus ponens* preserves truth, not grounds for believing (...). A real counterexample would have to use *modus ponens* to go from true premises to a false conclusion.”

³⁰This is almost a direct quote. RFM I-131 reads: “The laws of logic are indeed the expression of ‘thinking habits’ but also of the habit of *thinking*. That is to say they can be said to shew: how human beings think, and also *what* human beings call ‘thinking’.” Simply put: *how do we know* that one is making an inference (or intends to)? Just look at the *kind* of transition she makes (or takes herself to be making).

³¹Why I chose this specific formulation of (7) will be evident in a moment.

Friday’), which is *descriptive* (of a state of affairs), (7) is *regulative*. As such, it can be used, together with actual instantiations of MP, to teach someone the meaning of ‘if’ (just as RFM I-10 suggests about ‘all’)

So, Wittgenstein’s deflationist-therapeutic message is here, as everywhere, the following: ‘If baffled by the question as to where the inexorability of *modus ponens* comes from, gather the intellectual courage to consider the liberating thought that there may not be anything *deeper* going on here: it’s a stipulation. Do not be tempted to look for a justification of (7), and thus to say *more* than to just indicate (describe) its status—as *normative*.’³²

Moreover, sentences like (7) can be formulated for the other well-known valid schemas, such as the ones on the list of inference patterns – the logic students’ ‘cheat sheet’! – appended at the end of any introductory logic text: *modus ponens*, *modus tolens*, disjunctive syllogism, hypothetical syllogism, universal elimination, non-contradiction, etc.

The view just sketched may seem *too* unambitious and unexciting, not ‘substantial’ enough. And yet, struggling with the same issue (in virtue of what, if anything, are we entitled to infer according to MP?), Paul Boghossian’s insightful ‘Blind reasoning’ (2003) also reaches, via a different route, the point where he says, memorably: “There is just the list.”³³ To be sure, this is, so far, consistent with the Wittgensteinian perspective sketched here; yet, in the very next paragraph, he expresses dissatisfaction with this proposal. Clearly, he says, we need *more* than just this list of inference patterns. This sounds reasonable, but the problems appear when he reveals what he means by ‘more’ here: namely, to identify an *explanatory-justificatory* relation of the type ‘If X is true, then (7) is true’.

As Bohossian (2012, 225) puts it, the gist of his ‘inferentialist’ proposal as to what X may be is as follows:

Accordingly, I got interested in the question: Suppose we assume that

(A) Inferring according to MP is necessary for someone to mean *if* by ‘if’.

could we make it plausible that: (B) We are *blindly entitled* to infer according to MP.

I did not take it upon myself to argue for (A). I followed in the footsteps of the philosophers listed above and simply assumed (A). My main task was to try to show that if (A) is true (B) is true.³⁴

³²“For here there is an overwhelming temptation to say something more, when everything has already been described.” (RFM VI-21)

³³The whole paragraph reads: “This brings us to the second ‘deflationary’ answer to our question: a *list*. You want to know which inference patterns are permitted to be blind? These ones: Modus Ponens, Non-Contradiction, and a few others. Don’t ask *why* it is precisely these inference patterns that are sanctioned. There is no deep answer to that question; there is just the list.” (Boghossian (2003, 239)) He does not talk about ‘grammar’ in his paper, but is of course aware that he is in Wittgensteinian territory here, as footnote 17 in his paper reveals. The footnote mentions the key-point of PI 219, ‘I obey the rule *blindly*’ discussed above.

³⁴The “philosophers listed above” are Dummett, Brandom, Horwich, Block, Schiffer, Peacocke, Fodor. On the next page, Boghossian introduces another important clarification: “My critics, however, Paolo [Casalegno] and Tim [Williamson] included, have largely concentrated not on the arguments I provided for the conditional ‘if (A), then (B)’, but rather on the inferentialist assumption (A) itself.” (Boghossian (2012, 226)) The works referred here are Casalegno (2004), and Williamson (2007), (2011).

Now, my understanding of (B) is as being equivalent to (7) above. For, to say that one is “blindly entitled to infer according to MP” is to say that one just is in the position to go ahead and do something, namely detach the consequent according to the MP pattern, while at the same time lacking any justification as to why one is allowed to *act* this way. (In particular, the specific substitutions one makes for the antecedent and the consequent in the MP schema are irrelevant.) Thus, given the sense of ‘blind’ explicated above, this amounts to saying that the inference itself (i.e., the very act of detaching the consequent) proceeds ‘blindly’. But, then Wittgenstein would point out that (B), just like (7), is a *rule* too, a *convention*. As such, (B) is neither true, nor false, so (A)’s truth-value³⁵ cannot determine (B)’s truth-value. In fact, *nothing* can determine this truth-value, since, again, (B), as a rule, does not have a truth-value to begin with. Thus, what the inferentialist takes to be his ‘main task’, ‘to try to show that if (A) is true (B) is true’, turns out to be, from Wittgenstein’s perspective, a pointless endeavor.³⁶

This is then the end of the road for inferentialism. But it is not the end of the matter simpliciter, since, just as is the case with any rule, *there are* meaningful questions to ask about (B)/(7). One such question, and in fact the key-question for any rule, is, as we recall: why *this* rule, and not another?³⁷ I shall argue that Wittgenstein does engage with this (‘skeptical’) issue, in a profoundly original way. To understand his answer, we have to return to the genealogical question announced above. The claim is, then, that what dissolves (Boghossian’s) query about the content of *The List* is an answer to the following question: Where do the items on the list come from?³⁸

This interest in origins, it should be emphasized, is not an interest in historical-factual investigations per se, aimed at unveiling unknown, possibly curious, aspects about us humans. Instead, here, just as in other places, Wittgenstein pursues the goal announced at RFM I-142 (retained as PI 415), namely to “supply”

remarks on the natural history of man: not curiosities however, but rather observations on facts which no one has doubted and which have only gone unremarked because they are always before our eyes.

What is ‘hidden’ is of no interest indeed (PI 126) and, as we will see next, the answer to the genealogical question will not rely on anything of this nature. Once spelled out, Wittgenstein’s answer—that the rules can/should be thought of as *hardened linguistic regularities* (RFM VI-23), regularities which are “always before our eyes” —will effectively neutralize any concern that we might *not* be entitled to infer

³⁵Although Boghossian takes this to be beside the point (see fn. 34), it is worth mentioning that Williamson (in his (2003), (2007), (2011)) denies the truth of (A). He appeals to a simple counterexample: there are people who no doubt understand what ‘if’ means (such as the logician McGee; see fn. 29), and who, nevertheless, in certain circumstances, may genuinely refuse to infer according to MP.

³⁶This cannot be surprising for Boghossian, since his next sentence after the paragraph I just quoted reads: “In a series of papers, I experimented with a number of different ways of arguing for this conditional, none of which I am fully satisfied with.” (Boghossian (2012, 225))

³⁷This is obviously related to the previously raised issue of objectivity/arbitrariness: can rules be imposed on a whim? I set aside other meaningful questions about rules, e.g., about the *usefulness* of the rules we have. The answer, I take it, is trivial; yes, simple inspection of our linguistic interactions shows that such rules are very useful.

³⁸This is what I take to be Wittgenstein’s legitimate question, to be distinguished from Boghossian’s worry about their “deep” justification.

according to MP after all. (I.e., that a ‘real’ counterexample³⁹ to MP, or to any other basic rule, may still exist hidden somewhere.)

5 | HARDENING: (LINGUISTIC) CUSTOM MAKES (LOGICAL) LAW

A piece of what I would call ‘fictional anthropology’ may help us to take the next step. Consider Adam and Eve, two traffic planners in a large and busy city. They are tasked to set up bus schedules. Adam does this by *fiat*. He uses his discretionary powers to stipulate that, say, bus 167 arrives at Bus Stop A at 5.05, at But Stop B at 5.10, at But Stop C at 5.20, etc., —assuming that the bus can in principle follow this schedule (e.g., it will not require the driver to go faster than the allowed speed limit.) To stress: Adam stipulates all this from the comfortable armchair of his office. And, once the schedule is announced, it acquires normative force. It becomes a rule to be followed by the drivers on route 167. Call it Rule_a.

Yet it turns out that not all is well on the road. After a while, virtually all drivers complain that if they leave A at 5.05, then they just do not make it to B at 5.10. At that time of the day there is usually heavy traffic between A and B and—they all say—their recordings indicate that they arrive at B around 5.15 instead.

At this point Adam gives up and Eve takes over. She begins by simply registering this *description* of how things are: ‘At B at 5.15’. When it comes to getting to C, all the drivers report that because this stop is located in a quiet residential area, the trip from B takes – on average, timed over a relatively long period—only 3 minutes, not 10, despite the distance BC being nominally larger than AB. And Eve takes note of this *consensus* too: ‘At C at 5.18’. And so on. At the end of the round of consultation with the drivers, Eve uses her bureaucratic powers to *stipulate* a new schedule for bus 167 by *making a rule out of the collected records*: ‘At A at 5.05, at B at 5.15, at C at 5.18, etc.’ Call this Rule_e.

Now there are virtually no complaints from the drivers, and extremely few deviations from the schedule. This outcome is of course expected; how *could* things be different?! Yet one may still be surprised by it: are not *both* Rule_a and Rule_e stipulations, conventions? This is so indeed, yet what distinguishes them is that they have *different origins*. Rule_a is an *arbitrary* stipulation, simply a reflection of the planner’s whim. Rule_e is also ultimately a stipulation, but it is *not* arbitrary; it mirrors the record of what happens *de facto* in traffic. It actually *is* this descriptive record, one may point out—upon which normative force is bestowed.

This little story—especially the part about Eve—is meant to approximate what I take to be Wittgenstein’s *genealogical* proposal on how to see logic and, more generally, grammar. The logical/grammatical ‘propositions’ are stipulations, conventions; so, in this sense, are arbitrary. Yet in a more profound sense they are *not* arbitrary. They are not Dummettian (i.e., unconstrained, whimsical) stipulations of the Rule_a-type, but are descriptive-turned-normative items, originating in regularities already existing in linguistic exchanges, which involve interactions among many people, over a long period of time (of the Rule_e-type). Objectivity is thus preserved, in a *natural* fashion, with no need to appeal to fantastic super-natural, super-rigid machines. The rules are *hardened* regularities, or regularities that have been *endowed* with normative force—not mysteriously, by a higher power, but by *us*, by consensus⁴⁰ (although tacitly, not in a quasi-explicit fashion as we have it in the story.) Note, more-

³⁹See fn. 29.

⁴⁰This is why Wittgenstein can say that “consensus belongs to the essence of *calculation*” (RFM III-67) while at the same time deny arbitrariness (e.g., RFM I-116).

over, that although the very word I chose here as a label for Wittgenstein's view ('genealogical') typically connotes 'historical', it is important to realize that the kind of 'origins' I have in mind (as we recall from the previous discussion of Wittgenstein's notion of 'natural history') need not be of a literally historical nature, in the sense of being found to have happened in the past. As understood here, the act of hardening-into-a-rule happens (or happened) not only 'in the past', but is reaffirmed in the present. As long as the regularities constituting the form of life are in place (or, in our simplified story, the road conditions do not change), the rules will remain 'hard'.⁴¹

More concretely, the starting point in the bus parable is what happens 'on the road'—i.e., *in practice*, or customarily; and, in the case of logic/grammar, what happens within large communities of people who speak a language, over long stretches of time. Patterns of quiet, implicit acceptance of certain transformations of sentences develop gradually. Virtually everybody does the same thing in the same specific linguistic circumstances; e.g., nobody says that people recognized, and who self-identify as men are 'sisters', nobody stops to ask questions when an instance of (what we call) *modus ponens* is uttered. All members of the linguistic community sanction certain linguistic schemas by how they *act*, also by forming stable *expectations*, they too revealed by behaving in a certain way (e.g., if it is true that all trees have been cut, then *as a matter of fact* nobody will expect to find one standing).

As Wittgenstein emphasizes again and again, the key-platitude at the bottom of all this is that whenever and wherever there is language, there are regularities (PI 207)—and, when some of these happen to be extremely robust, we have an (implicit) 'logic'. Then, under the pressure of various practical constraints and interests, some of these hyperstable regularities are, at some point, endowed with normative force. At a later stage, in order to ensure social uniformity, the rules may be explicitly and carefully taught to those who are about to enter the linguistic community (in the same way, and perhaps at the same time, that they are taught how to speak). The 'pupils' would have found (and assimilated) them anyway, embedded in the regularities; but now that they have been made aware of them, they are in the position to *follow* these rules, not just simply *act in accordance* with them. They receive 'merciless' training⁴² in their use, and both types of deviants—both those who *cannot* follow these rules (for 'medical' reasons) and those who for whatever reason just *do not want* to—end up as social outcasts. Their linguistic productions are not understood by the larger community. They will not understand people from this community either, and will not be able to *live* within it since they will not be able to coordinate with others by forming appropriate expectations; even upon genuinely believing that all trees have been cut, such a person will expect to enjoy the shadow of some trees left standing!

The bus parable is in fact inspired by some remarks in LFM in which Wittgenstein reflects not on *modus ponens*, but on multiplication.⁴³ The issue is however the same: how do we even get to talk about 'right and wrong'? Here is such a suggestive passage:

⁴¹ An immediate question is – might a rule 'soften'? Or change, and gradually dissolve, even disappear? The answer is, I think, affirmative: this happens when the regularity generating it undergoes this kind of change. Forms of life and language games are not static units, they do alter over time; linguistic regularities present in a community of speakers will inevitably follow these transformations. PI 23 is, indeed (as a referee who asked the question rightly noticed), one of the remarks where Wittgenstein brings up the possibility that new language games may appear, and also contemplates the prospect of some language games becoming obsolete and getting forgotten. Not incidentally, at the end of the remark logic is mentioned as a case in point.

⁴² See RFM I-4.

⁴³ Although there are some differences between arithmetic and logic, his take on the issue of compulsion discussed here is the same for both – as said in RFM I-5.

It is like finding the best place to build a road across the moors. We may first send people across, and see which is the most natural way for them to go, and then build the road that way. Before the calculation was invented or the technique fixed, there was no right or wrong result. (LFM, p. 95)

It is, however, the thought of RFM VI-22 that was meant to be modelled by the bus parable:

It is as if we had hardened the empirical proposition into a rule. And now we have, not an hypothesis that gets tested by experience, but a paradigm with which experience is compared and judged. And so a new kind of judgment.

The passage in LFM above is preceded by this one, in which he talks explicitly about an ‘experiment’ like the one in the story:

This is an experiment – and one which we may later adopt as a calculation. What does that mean? Well, suppose that 90 per cent do it all one way. I say, "This is now going to be the right result." The experiment was to show what the most natural way is—which way most of them go. Now everybody is taught to do it—and now there is a right and wrong. Before there was not.

(LFM, p. 95)

So, I suggest that Wittgenstein’s proposal is that the precise sense in which the (grammatical) rules of logic are not arbitrary is given by *how* they are generated.⁴⁴ Although they are in the end stipulations, conventions, they were (and, as I insisted, still *are*) empirical regularities which ended up (naturally, in the course of time) hardened, or ‘petrified’ into norms (LFM, p. 98). They do not concern truth or falsehood, but regulate what makes sense to say.

There are a couple of important aspects of this genealogical view not yet taken up, and I’ll end the discussion by briefly broaching them.

The first is that there is no hidden property of these rules that puts them on the list. The model for such an explanatory ‘hidden’ property comes, again, from natural science (recall the previous discussion, and fn. 20) and Wittgenstein rejects it. For instance, what explains why we put beer, vodka and wine on the list of beverages banned before driving is a common property—they all contain alcohol. But that a drink has this property is the result of specialized empirical (chemical) investigation, not one of those facts “always before our eyes”. To the extent that ‘being a hardened regularity’ can be considered an explanatory, common property of these rules, it is not a property of the same kind. It is not hidden, or discoverable only by careful empirical investigation (like the presence of alcohol). It is precisely the rule’s previous *public*, successful ‘career’ as a regularity that puts it on the list.⁴⁵

⁴⁴Some of the prominent interpreters mentioned in fn. 2 seem to me disinterested in this aspect (I have in mind Hacker and Baker, Glock, Forster, Garver, Schroeder, McGinn, Canfield), while the others (Fogelin, Stroud, Maddy, and especially Pears and Steiner), although they draw attention to the genetic process, do not say as much as I think can be said about it. I commented on these paragraphs in a previous work dealing not with logic but with mathematics. See Bangu (2018).

⁴⁵Pears (2006, 78) writes: “The new necessary truth is adopted arbitrarily but not capriciously because its adoption is preceded by a completely successful career as a contingent proposition.” By now it should be clear what aspects of this characterization I agree with, as well as which parts I disagree with – namely, that for Wittgenstein the propositions of logic are not truths (since they are not even propositions).

Another corollary of the genealogical idea is a clarification of Wittgenstein's take on logical deviance (in particular, of his view on the deviant pupil who disobeys, say, the MP rule⁴⁶). As suggested above, on the genealogical view this problem loses its status of a genuine conceptual conundrum. There is nothing mysterious or deeply worrisome about such a deviant. In terms of the bus parable, the deviant is someone who seeks a driver job, or already has one, but does not make the arrival times stipulated by Rule_e—and this not only rarely (and with a credible excuse for the occasional failure), but on a regular basis (or, in some cases, deliberately). As is clear, no profound difficulty confronts us about how to deal with this situation. Such a person will not be hired in the first place, or will be fired soon. For an MP-deviant, the equivalent of this non-hiring/firing is a form of intellectual/linguistic exclusion⁴⁷, as it was for the s- and d-grammatical deviants we encountered at the beginning. Just as Eve has no reasons to worry about deviants and rebels against Rule_e—if *sufficiently many* drivers had opposed it, it would not have been adopted in the first place (and a different rule-schedule would have been adopted)—we too have no pressing concerns about the MP deviant: on the genealogical view, *there is no skeptic/deviant among us* (anymore).⁴⁸

Finally, the genealogical conception offers a new angle on the very status of logical laws. This point will allow us to understand in what sense the problem of deviance signaled above is one of 'political', or 'civil' nature, in a broad sense. The idea is to exploit a suggestion Wittgenstein offers in RFM I-116, where he compares the laws of logic to the 'laws of human society'. After making two (now unsurprising) points against arbitrariness and against construing compulsion as super-natural, even mystical ('one can't even think illogically'), the paragraph reads:

(...) Nevertheless the laws of inference can be said to compel us; in the same sense, that is to say, as other laws in human society. (...). If you draw different conclusions you do indeed get into conflict, e.g. with society; and also with other practical consequences.

This comparison gets us back to the proverb I used as a motto, which itself alludes to the hardening idea, via the following route. A prominent school of thought in jurisprudence claims that 'custom is a source of law', as explained here⁴⁹:

When writers on jurisprudence assert that custom is a source of law their primary meaning seems to be that in any given case a course of conduct persisted in by all or most of the members society engenders a rule of law enjoining the continuance of that of conduct. (...). He [C. K. Allen] sums the operation of custom in this sphere by saying that "the thing done" (*semble*, by all or most members of the community) becomes "the thing which *must* be done" (i.e., the rule binding on all members of the community).

(Braybrooke (1951, 71))

We can now see that although the kind of hardening process that must have guided Wittgenstein's thought could seem initially strange, such a process is recognized as one of the mainstream directions in

⁴⁶This is the equivalent of the mathematical deviant pupil in PI 185. See RFM I-113 to RFM I-116.

⁴⁷As a referee observed, the issue taken up here is directly related to the discussion in *On Certainty*, sections 608-612: "At the end of reasons comes *persuasion*. (Think what happens when missionaries convert natives.)" (sect. 612)

⁴⁸Yet such a skeptic *can*, of course, be brought to life—artificially—by those who Wittgenstein sometimes calls (scornfully) 'academic' philosophers!

⁴⁹In a book review of C. K. Allen's famous *Law in the Making* (3rd ed., 1939)

legal theorizing! By setting aside the obvious differences (logic is more general than jurisprudence), we can appreciate the analogies: the laws of society harden what-is-done (virtually universally), and logic/grammar ‘petrify’ existing linguistic regularities; thus, one may suggest, they harden what-is-said. Just as the laws of society owe their stability and authority to their origins, so do the laws of logic. On this account then, we can of course encounter logic deviants/skeptics just as we may encounter legal delinquents (or s-grammatical delinquents, for that matter). But they are only very few and far between – and ‘necessarily’ so.

Before we close, let me revisit, in order to resist, the still strong connotation of arbitrariness carried by ‘convention’. The opposition to arbitrariness I would like to convey is, interestingly, embedded right into its etymology: we have to think of ‘convention’ as meaning, primarily, to ‘con-vene’, that is, to ‘come together’.⁵⁰ Conventions, in the sense intended here, are not armchair stipulations but have a *different*, and clearly discernable source: while, in some sense, ‘imposed by an act of will’ (of the people to be regulated by them later on), more fundamentally they *emerge* from this community’s customary ways of acting (linguistically). Although someone specific (Eve, representing the Public Transportation Agency) bestows normative force on the description-based bus schedule, this authority, or normative power, does not come from this particular person (or source) exclusively. Rather, she’s the one who enacts it, while the rule’s power to generate obedience is ultimately to be located within the act of ‘coming together’ (con-vening) with the drivers. The connection with jurisprudence drawn above is meant to emphasize the common origin of the laws—and also to stress that, unlike philosophers, the law scholars are more likely to be cleareyed about the sources of normativity, because they are closer to actual policy- or law-making (more like Eve) than armchair philosophers (more like Adam) are.

To summarize and conclude. The admittedly inexorable compulsion of logical sentences (construed as rules) is not an illusion. It is also not super-natural, but the result of ‘historical’ contingencies, identical in fact to the compulsion to say ‘she is a woman’ and not ‘she is a man’. Just like our s- and d-grammars, our logic has become so ingrained in us that they can be called our second nature, belonging to the category of constitutive habits. This happens, I speculated, in two stages. At the first stage, there exists certain hyper-stable regularities of linguistic behavior—this is a (big) fact. At the second stage, some of these regularities are hardened; i.e., rules are stipulated. These rules *are* conventions, reflecting, as I said above, the will of the community. This will, to harden some of these hyper-stable regularities, is sovereign. *Nothing* dictates whether to harden or not; and hardening does not just happen by itself. If the community does not (want to) do it, there are no rules (only regularities).

Indeed, this introduces an element of arbitrariness into the picture; yet it is crucial to recall here that the rules are also *not* arbitrary, in the following two senses. First, the will of the community—to have rules at all, to ‘harden’—can only be exercised on the pool of hyper-stable regularities identified at the first stage: not just *anything* can be subject of hardening, on a whim. Second, *which* of the hyper-stable regularities from the pool is to be hardened is determined by the *interests* of the community, and these interests are ultimately contingent (they could have been different). This is one reason why the rules are contingent, too; another is that insofar as they originate in these hyper-stable regularities, the very fact that there *are* hyper-stable regularities at all is also contingent. Not only could the *world* have been such that regularities did not exist⁵¹, but also our *psychology* (memory, attention span, instinctive reactions, etc.) could have been different.⁵² Yet, on the other hand, the stipulation of rules is the point

⁵⁰In Latin, *convenio* (‘come, meet together’) is composed of *con* (‘with, together’) and *venio* (‘come’). See Skeat (2005, 133). I thank an anonymous referee for drawing my attention to this point.

⁵¹An example of a fact that would make (6) pointless could be that although one did cut all the trees, another tree would grow back in a split second. That this *does not* happen is a ‘general fact of nature’ (PI II, xii), too obvious to pay attention to.

⁵²This captures Maddy’s important point that logic emerges within a/our form of life as a body of rules shaped by the “trio of our interests, our nature, and the world’s regularities.” (Maddy (2014, 78)).

after which we can speak of normativity/necessity: after hardening, no facts ('exceptions') are allowed to challenge the rules (since they are not regarded as regularities anymore). Thus, if we look at logic from this demythologizing, normative perspective (of grammar), the traditional question about its necessity eludes a binary yes/no answer. On the basis of the account sketched here, logic is *contingently necessary*: necessary, but contingently so.

ACKNOWLEDGMENTS

For comments on the material in this paper, I would like to thank Penelope Maddy, Roy Sorensen, Chris Mitsch and Andrei Marasoiu, as well as my colleagues Kevin Cahill and Ben Martin. The referee reports helped sharpening the arguments here, and I am very grateful for this. I am solely responsible for the final form of the article.

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How to cite this article: Bangu S. Hard and Blind: On Wittgenstein's Genealogical View of Logical Necessity. *Philos Phenomenol Res.* 2019;00:1–20. <https://doi.org/10.1111/phpr.12661>