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ARE THERE GROUNDS OF LOGICAL NECESSITY?

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Abstract. An examination of the grounds of logical necessity is offered by taking its lead from Barry Stroud's challenge to the possibility of articulating satisfactorily any such grounds in full generality. The intelligibility of logical aliens is also considered, and different conceptions of such aliens, some more radical in their treatment of the issue than others, are examined as well. Logical aliens are beings whose thinking goes beyond the limits of thought, presumably with a logic different from our own. I argue that logical aliens are either something straightforward and unproblematic or something we cannot recognize as logical. In either case, there are ways of accommodating such aliens despite the fact that the search for grounds of logical necessity is ultimately misguided.

Keywords: Logical necessity • grounds • logical aliens • Stroud

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1. Introduction

In "Logical Aliens and the 'Ground' of Logical Necessity", Barry Stroud examines critically the very idea of the "ground" of logical necessity (Stroud 2018). He begins the article, which responds to an earlier paper by James Conant (1991), with a famous observation by Descartes to the effect that logical laws are contingently necessary (Stroud 2018, p. 205). At issue is an explanation of the necessity of necessary truths: the basis—or source, depending on which metaphor one prefers to employ—of their necessity.

As it turns out, the very idea of something contingently necessary is, on Stroud's view, incoherent. It suggests that something, even if it is necessary, might not be, or might not have been, the case. Consider Descartes's account of the relationship between God and the logical truths he created. Since God could have equally well created these truths by taking their negations to be the case, it is not clear whether they are really necessary. We face, thus, a dilemma about the concept of the contingently necessary: either the contingently necessary is not really necessary, because it could have not been the case—since its necessity holds only contingently—or it is not really contingent, because it could not fail to be the case—since it is necessary,

after all. The contingency subverts the necessity, and the necessity undermines the contingency. In the end, something needs to go.

Beyond the peculiarities of the Cartesian conception of the contingent necessary, and in light of this dilemma, it seems that what is necessary also holds necessarily. The need then emerges to explain the source of the necessity of necessary truths (Stroud 2018, p. 206). Since necessary truths, such as logical truths (on their usual understanding), cannot coherently be only contingently necessary, and if we assume, for the sake of argument, their overall necessity, in virtue of what is it that such necessity obtains? Under consideration here are the grounds of logical necessity. The explanation of the ground of the necessity of necessary truths, Stroud notes,

> whatever it might be, would presumably be offered as an answer to a certain question about the source or basis or explanation of necessary truth. But is there such a question we can envisage having a satisfactory answer to? What would an illuminating *explanation* of the necessity of necessary truths look like? And how, exactly, would it explain the necessity? If we can make no sense of having such an explanation, can anything be intelligibly said about the "source" or "ground" of the necessity of the necessary truths we accept? (Stroud 2018, p. 206).

The approach Stroud outlines in this passage—one that is typical of his work—is to question whether there is a way of even making sense of the required explanation. On Stroud's view, it is doubtful that one could conceptualize what an illuminating account of the necessity of necessary truths would be. In virtue of what would any such explanation account for the necessity at issue? It is unclear that raising this question, in the full generality that philosophical questions demand, may lead to a satisfactory answer. In the end, it is in doubt that we can give intelligibility to the "'ground' or 'source' of necessity of the necessary truths we accept" (Stroud 2018, p. 206). In what follows, I will consider these issues and examine whether and to what extent intelligibility can be given to them.

2. Understanding Knowledge and Necessity in General

Philosophical questions typically concern the possibility of a certain phenomenon—human knowledge, the basis of logical necessity—with a distinctive kind of generality. One cannot assume to have knowledge of the domain of inquiry involving the phenomena whose understanding one is searching for. After all, any knowledge that is simply assumed is not accounted for and fails to yield understanding of the relevant phenomena (Stroud 2000; for a discussion, see Williams 1996; Williams engages with the original papers by Stroud which were later collected together in Stroud's (2000) book). This generality is distinctive of philosophical questions.

Scientific questions often involved generality as well, but of a different sort. The questions are general in *scope*, concerning *all* objects of a certain kind, but not general in the *style of inquiry* that takes place, that is, regarding what is required *not* to be assumed concerning the domain under consideration. The less is assumed about the domain, the more general the style of inquiry involved is. Scientific questions may concern the characterization of the behavior of all quantum objects, or all structural proteins, or all economic systems, of a certain kind, under particular circumstances. What is not required from any acceptable scientific answer is that *nothing* should be assumed as already understood or known about the domain of investigation. Clearly, such assumption would prevent any scientific explanation of the relevant phenomena from being implemented, since such explanations rely on the conceptual resources that characterize the domain and the behavior of the objects in it.

Is the corresponding requirement—of not presupposing any knowledge or understanding of the relevant domain—in the case of philosophical questions reasonable at all? Isn't this requirement precisely what prevents philosophical questions from having satisfying answers? After all, it is unclear how a satisfactory answer about a domain of inquiry could be obtained if one is unable to assume any knowledge or understanding of the domain under consideration. Nevertheless, it is the very nature of philosophical questions to search for a special kind of understanding, which requires a corresponding kind of generality. Any account that assumes some items in the relevant domain of inquiry as being already understood fails to explain those items, for their understanding is assumed from the start. Yet, unless this generality condition is met, the proposed account would fail to provide the required sort of understanding. Since what is distinctive of philosophical questions are precisely this kind of generality and the corresponding understanding, the questions are set apart from those raised in other fields. If this conceptualization of philosophical questions is also what prevents satisfactory answers to them from emerging, this is an inherent trait of the questions themselves. They would not be philosophical if the relevant generality was not displayed.

Underlying Stroud's (2000) influential critique of the attempt to explain human knowledge in general is precisely this conceptualization of philosophical questions (for a broader discussion, see also Stroud 2011). The generality of the questions in the context of a philosophical theory of knowledge is crucial. As Stroud notes:

> What we seek in the philosophical theory of knowledge is an account that is completely general in several respects. We want to understand how any knowledge at all is possible—how anything we currently accept amounts to knowledge. Or, less ambitiously, we want to understand with complete generality how we come to know anything at all in a certain specified domain (Stroud 2000, p. 101).

The problem of understanding the possibility of knowledge emerges by the sheer

examination of a given domain—any domain—of inquiry. One cannot assume to have already some knowledge of that domain, otherwise whatever is assumed to be known is not explained. On Stroud's view:

> If we start by considering a certain domain of facts or truths and ask how anyone could come to know anything at all in that domain, it will seem that any other knowledge that might be relevant could not be allowed to amount to already knowing something in the domain in question. Knowledge of anything at all in that domain is what we want to explain, and if we simply assume from the outset that the person has already got some of that knowledge we will not be explaining all of it (Stroud 2000, p. 103).

The difficulty, however, is that if some knowledge is granted to the person, an additional step is still needed: a suitable inference from the relevant knowledge to the knowledge in the target domain. The need for such inference emerges from the generality of philosophical theorizing. If the knowledge the person is assumed to have is already knowledge of the domain in question, not everything in that domain will be explained. Thus, Stroud emphasizes:

> Any knowledge we do grant to the person will be of use to him only if he can somehow get from that knowledge to some knowledge in the domain in question. Some inference or transition would therefore appear to be needed—for example, some way of going from what he is aware of in perception to knowledge of the facts he claims to know (Stroud 2000, p.103).

Having established the need for an inference linking the assumed knowledge to the target domain, an additional difficulty becomes apparent: the epistemic quality of the inference also needs to be secured. The inference cannot be just a guess; otherwise, the evidence that is allegedly invoked to explain the knowledge in the target domain would not be effective. The person would need to know or, at least, have reason to believe that the inference is properly grounded. Nevertheless, this proper ground cannot be restricted to the evidential base, since it needs to transcend the base, nor can it entail something about the target domain, for in that case one would already have some knowledge of the domain. In other words, as Stroud points out:

> any such inference will be a good one, and will lead the person to knowledge, only if it is based on something the person also knows or has some reason to believe. He cannot just be making a guess that he has got good evidence. He has to know or at least have reason to believe something that will help get him from his evidential base to some knowledge in the domain in question. That 'something' that he needs to know cannot simply be part of his evidential base, since it has to get him beyond that base. But it cannot go so far beyond that base as to imply something already in the domain in question either, since the knowledge of anything at all in that domain is just what we are trying to explain (Stroud 2000, p. 103-104).

Not surprisingly perhaps, the result of these considerations is, once again, a dilemma. Stroud concludes:

> So it would seem that on either possibility we cannot explain with the proper generality how the kind of knowledge we want to understand is possible. If the person does know what he needs to know, he has already got some knowledge in the domain in question, and if he does not, he will not be able to get there from his evidential base alone (Stroud 2000, p. 104).

It is important for Stroud that the dilemma just formulated about understanding human knowledge surfaces naturally. The argument above addresses our intuitive conception of knowledge—whatever it may amount to—not a theoretical, philosophically elaborate account (see Stroud 1984). Otherwise, one could just dismiss the dilemma, insisting that it only concerns a problematic philosophical view about human knowledge, a view that should just be set aside. Since it is the ordinary, intuitive conception of knowledge that is at issue, one cannot simply dismiss the dilemma by abandoning the ordinary conception, for in doing that, skepticism would be ultimately embraced (an alternative Stroud would rather avoid if possible). Given the dilemma, one would need to conclude that it is unclear how ordinary knowledge can be obtained after all.

In trying to resist this skeptical conclusion, Michael Williams (1996) challenges the naturalness of skeptical doubts, questioning the alleged fact that these doubts seem to emerge naturally just by considering how to explain the (ordinary) knowledge that we are supposed to have. This includes the explanation of the scope of such knowledge. Williams insists that, despite appearances to the contrary, theoretical assumptions are inherently involved in skeptical doubts, especially assumptions about knowledge as an object of theoretical inquiry. (He calls the view that there is such an object 'epistemological realism'; Williams 1996).

It seems to me that Williams projects more onto skeptical arguments than is really needed for the arguments to work—especially if we are dealing with Pyrrhonian skeptics, for whom skeptical arguments are primarily dialectical (see Sextus 2000, and Bueno 2011, 2013). After all, Pyrrhonian skeptics would question any commitment to epistemological realism as a *skeptical* commitment. They would clearly suspend judgment about the issue of whether knowledge is (or is not) a proper—that is, stable and coherent—object of philosophical theorizing. Williams's attempt to block skeptical arguments by exposing them as being saddled with epistemological realism ultimately fails. No such assumption is part of a Pyrrhonian stance.

The same form of generality in philosophical questioning animates Stroud's remarks about explaining the necessity of logical truths in general. When considering a philosophical—that is, an especially general type of—explanation, he notes:

> But that kind of explanation does not seem possible in trying to explain the

> necessity of *all* necessary truths. A completely general explanation would presumably require that there be no unexplained or independent appeal to something already accepted as holding necessarily as part of the explanation of all necessities. The complete generality of the philosophical task appears to rule that out. It rules it out necessarily, one is tempted to add. It is that completely general question about the explanation or source of *all* necessity that I cannot envisage having a satisfactory answer to (Stroud 2018, p. 207).

The idea is, by now, familiar: an attempt to explain all necessities by appealing to something unexplained or that is already accepted as holding necessarily fails to satisfy the generality requirement of a philosophical question about the possibility of explaining *all* necessary truths. Once again, it is the generality of philosophical inquiry that disputes the availability of a satisfactory answer to the question. Whether we are considering knowledge or necessity, the conclusion obtained is the same.

3. Logical Necessity, Making Sense of Logical Aliens, and Modalism

The considerations so far seem to suggest that a form of skepticism about logical necessity emerges from the search for a philosophical understanding of the grounds of such necessity. This demands a general explanation of the basis of all logically necessary truths. This explanation has a presupposition about the modal status of the laws of logic, namely, that they are necessary. But are they really so? Stroud notes:

> Kant is said to believe that the laws of logic are necessary (or "simply necessary"). That could mean that the laws of logic hold necessarily, or it could mean only that the laws of logic are necessary in the sense of being necessary or indispensable for something—for thought, say, or rational thought (if that is different). To say only that the laws are necessary or required for thought is not, strictly speaking, to say anything one way or the other about the modal status of those laws themselves. Even to say that they are necessary or required for the possibility of thought seems to me to leave open the question whether they themselves hold necessarily. That is not because I think there is any doubt about whether the laws hold necessarily, but because I think the laws' holding necessarily does not follow from their being necessary for thought (Stroud 2018, p. 207).

It is important for Stroud to acknowledge the distinction between the modal status of the laws of logic—whether they hold necessarily or not (he thinks they do)—from their indispensability standing—whether these laws are required for the possibility of thought. A positive answer to the latter issue does not establish a positive answer to

the former. After all, even if it was not possible to have thoughts, or rational thoughts, without laws of logic, this would not entail that the laws themselves hold necessarily. They may be required for thought even if they hold only contingently, obtaining in some contexts, failing in others. In fact, someone may have thoughts and draw inferences that, perhaps unbeknown to the person, violate laws of logic, as is illustrated by any of the familiar fallacies of reasoning. We recognize the intended thoughts well enough to assess them and identify their inadequacy.

Suppose, nonetheless, that there is a being who reasons logically—and, thus, non-fallaciously—by using a logic that, despite being completely foreign to ours, is still a logic. A being of this sort would be a logical alien, in that the thoughts that are created are radically foreign to our own; that is, thoughts that are logical although dramatically different from anything that we could recognize as being logical—or even, perhaps, as being thoughts. The most extreme, and the most intriguing, form of a logical alien involves one whose logic and whose thoughts are so thoroughly different from ours that we cannot even make sense of their logicality or of their content. Untranslatability and incommensurability loom at large: we would be unable to translate the alien thoughts into our own system, unable to find common standards of evaluation between the logically alien thoughts and our own. Could there be such thoughts? Could there be such logical aliens? And if there could be, would it be possible even to recognize their thoughts for what they are, alien thoughts?

The very idea of logical aliens—including their thoughts—is fraught with difficulties, especially if they are understood in the strong sense, according to which alien thoughts are untranslatable, incommensurable, unintelligible to us. First, to peer into logically alien thoughts would require us to recognize them as *thoughts*, rather than as gibberish, and understand them—or, at least, understand them enough to apprehended them as being logical. This seems to require us to think meaningfully these thoughts. But how could this be done if the thoughts are alien—if they are logically alien, in fact? To think alien thoughts, we would have to think, as our own, thoughts that are supposed to be placed outside the boundaries of the intelligible, outside the boundaries of the meaningful, beyond the limits of thought (to use Graham Priest's (2002) apt phrase)—otherwise, the thoughts would not be alien, but just something formulated in a foreign, but translatable, language.

Second, to peer into logically alien thought, we would need to recognize it as *logical*—as logical thought—despite the fact that it has crossed the boundaries of logicality, at least of what we take to be logical. Without going beyond what can be recognized as logical, it is unclear that we would be dealing with something logically alien in the intended, strong sense.

It is perhaps not surprising that some have argued that logical aliens are impossible—or, at least, that it would not be possible for us to recognize them as such. Whatever lies beyond the boundaries of what can be thought will be conceptual-

ized by creatures like us as sheer nonsense. In the preface to the *Tractatus Logico-Philosophicus*, Ludwig Wittgenstein notes:

> in order to draw a limit to thought we should have to be able to think both sides of this limit (we should therefore have to be able to think what cannot be thought).
>
> The limit can, therefore, only be drawn in language and what lies on the other side of the limit will be simply nonsense (Wittgenstein 1922, Preface; see Conant 1991, p. 115).

Implicit in this passage are two different approaches to the idea of a logical alien, which is expressed in this context as that which goes beyond the limits of thought. On the one hand, the inconsistency view, suggested in the first sentence of Wittgenstein's quotation, insists that the very idea of limits of thought is inherently inconsistent. To specify the boundaries of what can be thought, of what can be logically thought, requires crossing these boundaries, since it is unclear how else the boundaries could be informatively and properly drawn. As a result, one ends up thinking what is impossible to be thought, thus stumbling into inconsistency. On this view, impossibilities provide an opportunity to expand the range of the consistent rather than to specify a rigid demarcation of the possible. (Of course, the underlying logic for any such inquiry needs to be paraconsistent, so that the resulting inconsistencies can be accommodated without triviality; see da Costa; Krause; Bueno 2007, and Priest 2002).

On the other hand, the consistency approach, suggested in the second sentence of Wittgenstein's quotation from the *Tractatus*, insists on the overall consistency of the idea of limits of thought. Such limits, on this view, can only be consistently established from within, that is, from the perspective of the language that is used to describe the boundaries in question. This entails that anything that goes beyond the limits cannot be thought and, hence, is conceptualized as nonsense. On this approach, the impossibility of thinking something demarcates the boundary of thought. Everything beyond this boundary as meaningless.

The inconsistency conception involves the recognition that crossing the boundaries of thought leads to inevitable inconsistencies. Embracing these inconsistencies is acknowledged as a condition for thinking what is not possible to think. The consistent view, in turn, insists that limits of thought can, in principle, be made consistent provided that some care is taken to specify them. To avoid the incongruity of having to think what cannot be thought, the items that lie outside the limits are characterized as being genuinely beyond the limits: they are nonsense. Found in the contrast between these two views is the familiar tension between the richer expressive resources allowed for by an inconsistent view and the expressive restrictions that are often involved in preserving consistency (see Priest 2006b).

Graham Priest, in his investigation of the limits of thought (Priest 2002), clearly

sides with the inconsistent conception. In fact, he identifies a general pattern in the phenomena, and argues that various kinds of limits of thought—limits of expression, iteration, cognition, and conception, among others—are inherently inconsistent. Thoughts concerning the limits of what can be thought are trapped, on the one hand, within the inclosure condition, which ensures that whatever is thought lies within the boundaries of what is possible to think. Yet, such thoughts (regarding the limits) also spill over the alleged boundaries in light of the transcendence condition, which entails that one can always think of what goes beyond the limits of thought. What outstrips such limits is not nonsense; it is just inconsistent.

There is, however, a third, perhaps more nuanced, conception of logical aliens, which lies halfway between the two extremes and combines features of both. It is a dynamic conception of the limits of thought. On this view, the limits are not known or specified in advance, but are moving targets and evolve as more is uncovered regarding what is logically possible. One starts with the consistency conception, which specifies rigid, fixed boundaries to logicality; typically, these are taken to be set by classical logic. But as one realizes that possibilities that were foreclosed by certain principles of classical logic can be entertained once these principles are questioned, the range of the possible is increased. The limits of thought were not where one thought they were, but a bit further away.

One may initially consider that objects cannot be incomplete, in the sense that either they have some property P or they do not. The principle of excluded middle requires this to be the case. Once one considers fictional objects, nevertheless, and properties that have not been specified in the relevant fiction (or which do not follow from what has been so specified), it becomes clear that there is no fact of the matter as to whether a given fictional object has a given property or not. What had been foreclosed as an impossibility, given excluded middle—incomplete objects—now becomes an open possibility. The limits of thought have just been extended.

Similar considerations can be made about failures of other principles from classical logic, such as, the violation of the principle of explosion and the corresponding possibility of studying inconsistent objects that is allowed by paraconsistent logics (da Costa; Krause; Bueno 2007, Priest 2006b), or the violation of the principle of identity and the corresponding possibility of investigating quantum systems involving objects to which identity does not apply, as allowed by non-reflexive logics (French & Krause 2006, da Costa & Bueno 2009), to mention just a couple of examples.

Clearly, the resulting picture requires logical pluralism (see Bueno & Shalkowski 2009, Bueno 2021, 2022). In each case of failure of a classical principle that precluded the possibility of investigating a certain domain, new possibilities emerge once it is realized that the logical space allows for possibilities that were ruled out by logical fiat. What was thought to be a limit to thought—the coherent investigation of inconsistent or incomplete domains or domains involving objects to which identity

does not apply—becomes a possibility in light of suitable non-classical logics, respectively, paraconsistent, constructive or non-reflexive logics. The limits of thought are not rigid, but evolving.

It may be objected that, contrary to this claim, the limits of thought are indeed rigid and fixed. The changes just mentioned are not to the limits of thought, but to our *conception* of where these limits lie. Only our understanding of the situation has been revised; not the limits themselves. Yet, what grounds do we have to consider that the limits are indeed fixed, rather than being uncovered as new logics are characterized and formulated? A logical pluralist may grant that the logical space—the space of what is logically possible—is fixed, and reflects whatever properties the objects in question have. Nevertheless, we uncover new regions of this space once certain logics are explored and articulated (Bueno 2021).

In his discussion of the principle of non-contradiction in *Metaphysics*, Aristotle encountered, early on, the issue of such limits, formulated in terms of what can or cannot be expressed once the limits of logic are considered. As he notes:

> if all contradictories are true of the same subject at the same time, evidently all things will be one. For the same thing will be a trireme, a wall, and a man, if it is equally possible to affirm and to deny anything of anything (Aristotle 1984, p. 1591; $1007^{b}20$-23).

Aristotle expresses here the idea that if contradictories were true of the same object, the capacity to distinguish what is true of such object and what is false would be lost. This is, of course, something that results from any logic that is explosive, i.e., that identifies the presence of contradictions (statements of the form '*A* and not-*A*') and triviality (namely, that every statement in the language follows from a contradiction). Arguably, Aristotle is registering in this passage the concern that trivialism (the claim that everything is true) should be avoided. At the time of his writing, the possibility of distinguishing contradiction and triviality was not yet an item for serious consideration in the logical space. The boundary of what was logically possible was set by what was not contradictory. Logical anarchy and the presence of contradictions were blatantly identified.

Aristotle aimed to warn those who might want to try to go beyond the consistent and entertain the possibility that some contradictions are true; on his view, they will be ultimately unable to express anything. After all, in a classical logic, if an object is both *P* and not-*P*, it is unclear that it is either, given that the object being *P* rules out that it is not-*P*, and it being not-*P* excludes the possibility that it is also *P*. In this sense, the object becomes indeterminate (for a discussion of this passage, see Priest 2006a, p. 34). Moreover, assuming again classical logic, since no object can be both *P* and not-*P*, no such inconsistent object exists. Once again, the boundaries of the logical are given by the consistent, namely, by that which does not entail a contradiction (of

the form '*P* and not-*P*').

Aristotle highlights the point as follows:

> They [who claim that all contradictories are true] seem, then, to be speaking of the indeterminate, and, while fancying themselves to be speaking of being, they are speaking about non-being; for that which exists potentially and not actually is the indeterminate (Aristotle 1984, p. 1591; 1007^{b}*26-29)*.

In other words, by violating the law of non-contradiction, speakers fail to convey any content: the indeterminate delineates the boundary of thought. (An assessment of Aristotle's unpersuasive arguments against the law of non-contradiction can be found in Priest 2006a, p. 7-42.)

Once paraconsistent logics are entertained, the flagrantly question-begging nature of Aristotle's arguments becomes manifest (a point highlighted by Priest 2006a, p. 7-42). With the distinction between contradiction and triviality articulated within such logics, the possibility of thinking inconsistent thoughts without logical anarchy emerges. The limits of thought are no longer set by the consistent: one can explore the domain of the inconsistent perfectly coherently. The logical space is richer than initially expected.

In the beginning of this section, I quoted a passage in which Stroud noted that "[logical] laws' holding necessarily does not follow from their being necessary for thought" (Stroud 2018, p. 207). This passage is important because it allows Stroud to resist Conant's suggestion that Frege faces an inconsistency in denying that there are logical aliens. Part of the problem, according to Stroud, consists in the fact that Conant considers the laws of logic as constitutive of the possibility of rational thought (Conant 1991, p. 150-151). In a Wittgensteinian mode, Conant does stress that:

> The attempt to say that illogical thought is something that *cannot* be, to say that it involves a transgression of the limits of thought, requires that we be able to draw the limit (Conant 1991, p. 150).

But this seems to be an impossibility: an inconsistent approach to the limits of thought is ruled out in broadly Aristotelian terms. Stroud (2018), in turn, resists this interpretation, arguing that Frege accepts the possibility that there are logical aliens but disputes that we would be able to understand them. The pluralist alternative suggested above acknowledges the limits of thought, given the acceptance of classical logic, but allows for the exploration of thought beyond such limits once a paraconsistent logic is entertained.

Reflecting on the interplay between logic and possibility—each logic expresses new possibilities in the logical space (Bueno 2021)—is an aspect of logic that a modalist would stress (Bueno & Shalkowski 2009). For the modalist, what is possible or necessary cannot be characterized in non-modal terms, but ultimately needs

to be taken as primitive. Interestingly, in the end, Stroud seems to adopt a form of modalism, embracing modality as not being reducible to the non-modal (see also Stroud 2011). He notes:

> I think we have to grant that some truths are necessary in this sense [namely, that they hold necessarily, with no possibility of having been false]. But that idea of necessity, for those who accept it, does not seem to me to offer much promise of a satisfactory *explanation* of that distinctive modal status.
>
> I return to the question of what such an explanation would be. I take it that modal terms like 'necessary' and 'possible' are irreducible to others. There is no prospect of simply defining the idea of necessity or reducing it to some equivalent but fully non-modal terms. That is not to be expected (Stroud 2018, p. 214).

Explaining the grounds of logical necessity does not seem to be feasible given the irreducible nature of modality. It is unclear that there is a non-modal domain more basic than the modal that could explain what is necessary and what is possible.

Returning to the issue of the connections between logic and what is required for the possibility of though, Stroud emphasizes:

> Saying that the laws of logic are "constitutive of the possibility of thought" could mean that the laws of logic state what must be so if thought is to be possible—there could be no thought, or no possibility of thought, if those laws were not true. One obstacle to explaining necessity in this way is that this is itself a claim of necessity: that the truths stated by the laws of logic are themselves necessary conditions of the possibility of thought. Even if that is true, it does not seem to help explain or account for the necessity of all necessary truths. It makes use of the very idea of necessity that is meant to be explained. This raises again the question what sort of explanation we are looking for, or what a fully satisfactory explanation of necessity is expected to do (Stroud 2018, p. 214).

Once again, it is unclear that the project of trying to explain, in full generality, the grounds of logical necessity can be satisfactorily carried out. In trying to implement it, we end up being left dissatisfied.

4. Conclusion

Given the considerations above, it is doubtful that there are grounds of logical necessity, items that can be used to explain the necessity of all necessary truths. Any such explanation seems to fail in light of the modal status of the items that would need to be invoked in implementing the explanation in question: if the items are contingent, they are unable to account for the necessity of the *explanandum*; if the items

are necessary, their necessity is also in need of explanation and, thus, is ultimately inadequate for the task at hand.

Rather than aiming to identify such grounds, an alternative consists in acknowledging, with the modalist, the irreducible nature of modality and the close connection between possibility and logic. In this way, a dynamic account can be offered of the limits of thought. Coupled with a pluralist understanding of logic, the proposal makes room for logics to express possibilities. On this conception, logical aliens become moving targets rather than impossibilities to be ruled out.

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