

The Regress of Necessity and Its Structure

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Abstract

In this paper, I argue that those relying solely on the transmissive model to explain necessity face a regress of necessity. I then argue that the regress of necessity is vicious due to explanatory failure because it fails to address the source question of necessity adequately. We have prima facie justification for this conclusion in the absence of positive arguments for necessity infinitism, which holds that an infinite chain of necessity could serve as the source of necessity. On pain of vicious regress, we should accept necessity foundationalism, which posits the existence of foundational box-truths (truths of the form $\Box p$) whose necessity is not explained by the necessity of further box-truths. Necessity foundationalism is motivated by the regress of necessity in a similar manner to justification foundationalism, which is motivated by the regress of epistemic reason.

1. Introduction

Bob Hale (2002, 2013) once motivated the existence of foundational necessary truths on the ground that a non-transmissive explanation of necessity is possible. The non-transmissive explanation explains the necessity of a necessary truth by appealing only to the truth of another necessary truth without its necessity doing any explanatory work. In contrast, the transmissive explanation appeals to the necessity of further necessary truths. However, Carlos Romero (2019, forthcoming) doubts that the non-transmissive explanation is a genuine possibility. In this paper, I shall provide a novel argument for the existence of foundational necessary truths, which, in my terminology, amounts to accepting necessity foundationalism.

Here is some jargon for further discussion. Truths that take the form " $\Box p$ " are called *box-truths*. Further box-truths are appealed to in a transmissive explanation of a box-truth, and the former box-truth is explained transmissively. In a non-transmissive explanation of a box-truth, no appeal is made to further box-truths, and the box-truth is explained non-transmissively. *The transmissive model* explains every box-truth transmissively, while *the non-transmissive model* explains some box-truths non-transmissively.

Here is my plan. Section 2 begins with Simon Blackburn's (1993) dilemma for explaining necessity and demonstrates how there is a regress of necessity for those who believe the only plausible model to explain necessity is the transmissive one. Section 3 proceeds to argue that the regress of necessity is

vicious by virtue of explanatory failure, applying Michael Huemer's (2016) theory of viciousness. In Section 4, I motivate necessity foundationalism on pain of vicious regress.

2. The regress of necessity

Simon Blackburn (1993: 53) introduces a dilemma in explaining necessity. Suppose we attempt to explain the box-truth $\Box p$. We have two options: either we appeal to something contingent (the contingency horn) or something necessary (the necessity horn). The core idea of the contingency horn is that contingent explanans are not suitable candidates for explaining box-truths. For a detailed discussion of the contingency horn, refer to Hale (2002) and Hale (2013), chap. 3.5. (I shall not go into details here.) If the explanans is necessary, it fails to provide the desired explanation because it merely shifts the question to another box-truth.

Bob Hale (2002) noticed that the necessity horn rests on the transmissive model, which invokes a further box-truth to explain every box-truth.

A transmissive explanation has the form: necessarily B because [necessarily A and it follows from A that B]—the necessity of A is transmitted across the entailment to the explanandum. (Hale 2013: 96. My brackets for clarification of scope.)

He contended that the transmissive model is not the only possible and proposed that the non-transmissive model is also possible. According to the non-transmissive model, some box-truths are explained non-transmissively.

A non-transmissive explanation is an explanation of the form ' $\Box p$ because q' in which the explanans, q , is indeed necessary (at least if it is true, as it must be if we are to have an explanation at all), but in which what explains the necessity of the explanandum is not q 's necessity, but its truth simpliciter. (Hale 2013: 131)

However, some philosophers, like Romero (2019), might doubt that the non-transmissive is possible. Romero (forthcoming: 10) emphasizes, "I do not think it is obvious that necessity can play no role in the explanation—one may doubt that there truly are non-transmissive explanations." As he speculated in his

earlier paper (2019: 127), "... explanations of modality seem to be non-transmissive only because the modal principle of the necessity of [the explanans] ...is implicitly assumed." (My brackets for simplifying discussion) If Romero argues against the possibility of the non-transmissive explanation, it is plausible to interpret "the modal principle" as "the explanandum's necessity somehow follows from the explanans's necessity". Then, the non-transmissive explanation is impossible because every non-transmissive explanation is implicitly transmissive in the sense of assuming "the modal principle". Therefore, it seems that the non-transmissive model is not plausible.

However, an infinite regress of necessity would ensue if the only plausible model for explaining necessity is the transmissive one. Once again, suppose the box-truth $\Box p$ needs explanation, and only the transmissive model is available. We appeal to another box-truth $\Box q$. Since the necessity of $\Box q$ plays an explanatory role, the necessity of $\Box q$ is called into question. We then introduce another box-truth $\Box r$ to explain the box-truth $\Box q$, leading to the necessity of $\Box r$ needing explanation. Again, we can only appeal to another box-truth, and an infinite regress of necessity would ensue if there were no principled way to stop the reasoning.

One might question why the regress of necessity is considered a serious problem if we are unsure whether the infinite regress is vicious or benign. In the following discussion, I will evaluate the regress of necessity and argue that it is indeed a vicious one.

3. The regress of necessity is vicious

To diagnose the viciousness of a regress, it is desirable to identify common features shared by most vicious regresses. I will apply Michael Huemer's (2016) theory of viciousness to diagnose the regress of necessity. Huemer (2016: 229–246) identifies three features of viciousness: metaphysical impossibility, extreme implausibility, and explanatory failure (Ricki Leigh Bliss (2013) also considers explanatory failure as an important feature of vicious regressions). Only the last one is relevant to our discussion. This is because, firstly, an infinite regress is considered vicious due to a metaphysical impossibility, according to Huemer's account, only if it implicates an infinite natural intensive magnitude (such as mass or energy). Presumably, the regress

of necessity does not involve an infinite intensive magnitude, so this feature of viciousness is irrelevant here. Secondly, an infinite regress is deemed vicious by being extremely implausible, mainly when it is empirically implausible that humans can carry out such an infinity. This feature primarily relates to regressions involving human capacities. For example, in the regress of epistemic reason, it is empirically implausible that humans can carry out such an infinite series of reasons to justify any beliefs.

The Regress Argument for (Justification) Foundationalism: "This argument claims that because there cannot be an infinite series of reasons for any belief, there must be some beliefs that are justified in a way that does not depend on reasons. These 'foundational' beliefs would be the source of the justification for all other justified beliefs." (Huemer 2016: 229. My brackets for clarification.)

The notion of explanation featured in the regress of necessity does not concern what human beings could do (it is not an epistemic notion but a metaphysical one). Therefore, extreme implausibility is irrelevant to the regress of necessity.

What remains, then, for an infinite regress to be considered vicious is its indication of a theory's failure to explain what it intends to explain. Let me begin with two simple (but false) scientific theories and then, by examining them, derive a general procedure to determine when an infinite regress is vicious due to explanatory failure.

These two examples (from Huemer (2016) and Bliss (2013)), which characterize explanatory failure, are the homuncular theory of perception and the turtle's regress. First, let's consider the homuncular theory of perception: According to this theory, for a person to see an object just is for a tiny person sitting behind the person's eyes to receive and process information and send it to the brain. However, this leads to the question: why does this tiny person have vision? The theory posits that a second little person sits behind the first one's eyes to receive and process what the first one sees. This cycle continues indefinitely, resulting in an infinite regress of little persons sitting behind eyes.

This theory is false but a good example of explanatory failure. It aims to explain how vision happens by positing a tiny person behind the eyes. However, this approach raises questions about the tiny person's vision, which

also needs explanation. Notably, the problem with the homuncular theory isn't solely about positing an infinite number of tiny persons. Even if we entertain the idea of an infinite number of tiny persons inside our brains, the theory still falls short of explaining how vision happens due to explanatory failure at every level. At each level of explanation, a tiny person's vision remains unexplained. While the vision of each particular tiny person may be successfully explained, dissatisfaction arises when considering the general vision process. This dissatisfaction stems from the consistent reappearance of vision in the explanans.

The second example is the turtle's regress. Consider the question, "How could the earth not fall down in space?" A pre-scientific cosmological theory says, "There is a giant turtle supporting the earth." We wonder what happens to the giant turtle and why it does not fall. The response is, "It's turtles all the way down."

The turtle's regress is considered vicious because it fails to explain why the earth does not fall down in space. By positing the first turtle, the state of not falling reappeared in the explanans, and the first turtle's state of not falling requires further explanation. It is not helpful to explain why the earth does not fall even by introducing an infinite number of turtles because, at every level of explanation, there is always a turtle's state of not falling that remains in question and unexplained.

At first glance, one might think an infinite series of turtles could explain why the earth does not fall down in space. However, as Huemer (2016: 237) suggests, it could be an infinite series of falling turtles rather than an infinite series of stationary turtles. Thus, even an infinite chain of turtles as a whole still falls short of explanation.

Now, I am in a position to propose a general procedure for determining when an infinite regress is vicious due to explanatory failure:

1. If there is an infinite regress, identify whether there is a valid explanatory task.
2. If there is a valid explanatory task, identify whether an infinite regress could fulfil the explanatory task. To appreciate how this might be done, consider justification infinitism, which claims that the source of

justification is an infinite, non-repeating chain of epistemic reasons standing behind each justified belief.

What about the regress of necessity? My answer: it is vicious by virtue of explanatory failure. The first step in our analysis is identifying the explanatory task. Rather than explaining particular box-truths, the crux lies in explaining necessity in general. Hale (2002: 309) sometimes takes an explanation of necessity in general as addressing an "anything at all" question, namely, "Why is there necessity at all?" which amounts to explaining why it is true that there is at least one necessary truth. If we interpret the explanatory task this way, it will have only simple answers. Following most of the literature on grounding, I take existential truths to be grounded in their true instances. Then the question "Why is there necessity at all?" has some simple answers: because it is a necessary truth that Donald Trump is self-identical, and because it is a necessary truth that I cannot have been born of different parents. (Thank Julio De Rizzo for pressing this line of reasoning to me.)

If these simple answers prove unsatisfactory, we must reconsider our interpretation. Another plausible interpretation of the "anything at all" question is to take it as a query about the source of necessity. I do not delve into a detailed exploration of the source question because I trust my readers to find it intelligible. Prominent answers to the source of necessity in literature include our linguistic conventions, essences of things, and so on. In epistemology, the source question of justification is already familiar. A notable answer from foundationalists is appearance or seeming (Huemer 2007).

The second step is to determine whether the regress of necessity could fulfil the explanatory task of answering the source question. It falls short because there is always an unexplained necessity at every level of explanation, and the residual necessity reappears infinitely many times within the explanans. Thus, the regress of necessity cannot answer the source question.

It is plausible to conclude that the regress of necessity is vicious due to explanatory failure. The vicious regress poses a severe problem to those who believe that the only plausible model for explaining box-truths is the transmissive one, as its viciousness indicates the impotent explanatory power of this model. The best approach to avoid the regress of necessity is to accept

the non-transmissive model as a genuine possibility. As I shall argue next, the regress of necessity independently motivates what I will label "necessity foundationalism".

4. Necessity Foundationalism

Necessity foundationalism is the thesis that there are foundational box-truths whose necessity (i) is not explained by the necessity of further box-truths, (ii) can explain the necessity of every box-truths distinct from them, and (iii) is non-transmissively explained by further necessary truths. I admit that the definition is informal. But if the above "explain" could be cashed out in terms of grounding, a formal definition is in the vicinity. However, I leave that task for another paper.

Why accept necessity foundationalism in the first place? It is because it offers a way to avoid the regress of necessity, and the vicious nature of the regress serves as motivation for it. Thus, it seems that a vicious regress could indeed serve as an argument for a specific form of foundationalism. This is evident in justification foundationalism, which posits the existence of basic beliefs—sometimes called foundational beliefs—that are justified in a way that does not depend on being justified by other beliefs.

As mentioned earlier, the regress of epistemic reason is vicious by virtue of extreme implausibility, and it serves as motivation for justification foundationalism. An analogy can be drawn between the regress of epistemic reason and the regress of necessity because they are both considered vicious due to explanatory failure. (This suggests that a regress could be vicious in two distinct senses.)

The regress of epistemic reason is supposed to answer the source question of justification. Recall justification infinitism, which holds that for a belief to be justified is for it to have an infinite, non-repeating chain of reasons standing behind each justified belief (Huemer 2022: 81). However, justification infinitism fails to answer the source question because at every level of reasoning, there is always an unjustified belief reappearing within the explanans. Even if an ideal agent could reason through an infinite series of chains, the regress of reason as a whole still falls short of answering the source

question of justification. Therefore, the regress of epistemic reason is vicious by virtue of explanatory failure, rendering justification infinitism unmotivated.

Let us refer to the theory that accepts the regress of necessity (as benign) as necessity infinitism. The theory proposes that for every box-truths, there are infinitely many box-truths behind it, serving as the source of necessity. From our previous discussion, without plausible arguments for necessity infinitism, it is at least *prima facie* justified for us to conclude that the regress of necessity is vicious due to explanatory failure and necessity infinitism is unmotivated. The plausible theories left for us are justification foundationalism and necessity foundationalism. Therefore, just as the regress of epistemic reason could motivate justification foundationalism, the regress of necessity could motivate necessity foundationalism. (It's worth noting that a complete analogy would involve mentioning justification coherentism and necessity coherentism as well—maybe even foundherentism—but due to our limited discussion space, I'll reserve that for another context.)

References

- Blackburn, Simon (1993) "Morals and Modals", in: *Essays in Quasi-Realis*, New York: Oxford University Press, 52–74.
- Bliss, Ricki Leigh (2013) "Viciousness and the Structure of Reality", *Philosophical Studies* 166 (2), 399–418.
- Hale, Bob (2002) "The Source of Necessity", *Noûs* 36 (Suppl 16), 299–319.
- Hale, Bob (2013) *Necessary Beings: An Essay on Ontology, Modality, and the Relations Between Them*, New York: Oxford University Press.
- Huemer, Michael (2007) "Compassionate phenomenal conservatism", *Philosophy and Phenomenological Research* 74 (1), 30–55.
- Huemer, Michael (2016) *Approaching Infinity*, New York: Palgrave Macmillan.
- Huemer, Michael (2022) *Understanding Knowledge*.
- Romero, Carlos (2019) "Modality is not Explainable by Essence", *Philosophical Quarterly* 69 (274), 121–141.
- Romero, Carlos (forthcoming) "On Explaining Necessity by the Essence of Essence", *Inquiry: An Interdisciplinary Journal of Philosophy*.

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